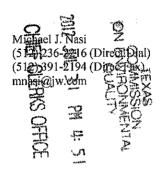


July 31, 2012



#### VIA Hand Delivery

Bridget C. Bohac, Chief Clerk Texas Commission on Environmental Quality 12100 Park 35 Circle Building F, 1st Floor Austin, Texas 78753

RE:

Cottonwood Energy Company LP- Appeal of July 10, 2012 Negative Use

**Determinations** 

Dear Ms. Bohac:

We are in receipt of the Executive Director's letters dated July 10, 2012 notifying the Applicant of a negative use determination (the "*Determination*") on its applications; No. 15505, No. 16412, No. 16411 and No. 16410 (the "*Application*")

#### I. Procedures For Appeal

Applicant disagrees with the Determination and pursuant to 30 TAC 17.25 hereby provides:

(1) the name, address, and daytime telephone number of the person filing the appeal is:

Mike Nasi Jackson Walker L.L.P. 100 Congress Ave., Ste. 1100 Austin, Texas 78701 512-236-2216

As legal counsel to: Cottonwood Energy Company LP

(2) the name and address of the entity to which the use determination was issued:

Cottonwood Energy Company LP Cottonwood Energy Center 976 County Road 4213 Deweyville, Texas (Newton County)

8325310v.4 - (512) 236-2000 • fax (512) 236-2002

(3) the use determination application number for the Application was:

No. 15505, No. 16412, No. 16411, No. 16410

(4) request Commission consideration of the use determination:

Applicant hereby requests the Commission to hear and consider the merits of the Application and reach a determination that a negative use determination is not appropriate and the matter should be remanded back to the Executive Director with instructions to revisit the pollution control aspects of the subject property.

Buja Ru

(5) The basis for the appeal is set forth in full in the attached brief.

Sincerely,

for Michael J. Nasi, Counsel for Cottonwood Energy

Company LP

TCEQ DUCKET NO		
APPEAL BY Cottonwood Energy	<b>§</b>	TEXAS COMMISSION
Company LP	§	
	§	. <b>ON</b>
NEGATIVE USE DETERMINATION	§	
ISSUED TO Cottonwood Energy Company LP	§	ENVIRONMENTAL QUALITY

## APPEAL OF NEGATIVE USE DETERMINATION ISSUED TO COTTONWOOD ENERGY COMPABY LP

Cottonwood Energy Company LP ("Applicant" or "Cottonwood") files this appeal of the negative use determinations issued by the Executive Director on July 10, 2012. For the reasons articulated below, the Applicant respectfully requests that the Commission sustain the Applicant's appeal of the negative use determinations and remand the matter to the Executive Director with instructions to revisit the pollution control aspects of the subject property.

Part I of this brief provides a brief background of the Pollution Control Property Program; Part II describes the procedural background of the application; Part III-VI detail the Applicant's argument why the negative use determination is a misapplication of Texas law, is based on policy concerns outside of the Agency's purview, and is founded on a defective technical evaluation.

#### **Summary of Argument**

This is an appeal of a negative use determination. Therefore, quite simply, the only question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether *any* percentage above zero is appropriate. As set forth fully herein, applicable law, prior precedent, and the record in this case demand that, at a minimum, a number above zero be used and a positive use determination be issued. Thus, this appeal should be granted and this matter should be remanded back to the Executive Director for a determination that the property in question is eligible for a positive use determination.

#### I. Program Background

On November 2, 1993, Texans approved Proposition 2 amending the Texas Constitution to provide tax relief for pollution control property. This amendment added § 1-1 to the Texas Constitution, Article VIII, which states:

(a) The legislature by general law may exempt from ad valorem taxation all or part of real and personal property used, constructed,

acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution.

(b) This section applies to real and personal property used as a facility, device, or method for the control of air, water, or land pollution that would otherwise be taxable for the first time on or after January 1, 1994.

In response to the constitutional amendment, the Texas Legislature added Texas Tax Code, § 11.31, Pollution Control Property ("§11.31"). The statute establishes a process where applicants submit Applications for Use Determination to the Executive Director of the TCEQ to determine whether the property is used wholly or in part for pollution control. The Executive Director's role is limited by § 11.31 to the specific task of conducting a technical evaluation to determine whether the equipment is used wholly or partly for the control of air, water, or land pollution, and does not include any evaluation of the merit of the tax exemption itself or tax policy implications of granting positive or negative use determinations.

The tax appraisal district where the Pollution Control Property will be installed/constructed is the entity charged with actually granting the tax exemption. If an applicant obtains a positive use determination from the Executive Director, the applicant must then submit another application with the local appraisal district to receive the tax exemption for the pollution control property.

In 2001, the Legislature passed House Bill 3121, which amended §11.31. These amendments included providing a process for appealing the Executive Director's use determinations.<sup>3</sup> House Bill 3121 also required the Commission to adopt rules that establish specific standards for the review of applications that ensure determinations are equal and uniform,<sup>4</sup> and to adopt rules to distinguish the proportion of property that is used to control pollution from the proportion that is used to produce goods or services.<sup>5</sup>

In 2007, § 11.31 was amended again with the passage of House Bill 3732, which required the Commission to adopt a list of equipment that is considered pollution control property, including the equipment listed in § 11.31(k). In adopting rules for the implementation of House Bill 3732, the TCEQ created a specific review process for those applications applying for the categories of listed equipment. For these applications, the Executive Director must determine

<sup>&</sup>lt;sup>1</sup> TEX. TAX CODE § 11.31(e) and (d).

<sup>&</sup>lt;sup>2</sup> TEX, TAX CODE § 11.31(c).

<sup>&</sup>lt;sup>3</sup> TEX. TAX CODE § 11.31(e).

<sup>&</sup>lt;sup>4</sup> TEX. TAX CODE § 11.31(g)(1) and (g)(2).

<sup>&</sup>lt;sup>5</sup> TEX. TAX CODE § 11.31(g)(3).

the proportion of the equipment used for pollution control and the proportion that is used for production. The application that is the subject of this appeal is a Tier III application.

#### II. Procedural Background

On July 5, 2011, the Applicant filed a Tier III Application for Use Determination for Pollution Control Property with the Executive Director for one Heat Recovery Steam Generator ("HRSG") and dedicated ancillary systems at the Cottonwood Energy Center (See Attachment A). The Applicant then submitted additional applications for three other HRSG units at the Cottonwood Energy Center on December 2, 2011 (See Attachments B, C and D). The Executive Director conducted a technical review of each of these four applications and on July 10, 2012 issued a negative use determination for the four HRSGs, stating that "[h]eat recovery steam generators and associated dedicated ancillary systems are used solely for production; therefore, are not eligible for a positive use determination." (See Attachments E, F, G and H).

The Executive Director has received approximately thirty-eight similar applications for HRSGs and associated equipment installed at combined-cycle electric generation facilities. The Executive Director issued 100 percent positive use determinations for twenty-six of the HRSG applications, leaving twelve applications pending. Six of the positive use determinations were appealed by local taxing units. The application at issue in this appeal was one of applications left pending by the Executive Director. On July 10, 2012, the Executive Director issued negative used determinations for all of the pending HRSG applications as well as the six applications that were appealed. The negative use determination was issued to Cottonwood despite its applications being substantively identical to the applications that received 100 percent positive use determinations.

## III. Executive Director Failed to Comply with the Timeline in Texas Tax Code § 11.31(m) for Review of Application

In 2007, the Texas Legislature passed House Bill 3732, which amended Texas tax Code § 11.31. Specifically, House Bill 3732 added subsections (k) and (m). Subsections 11.31(k) and (m) direct that the Commission "shall determine" that "heat recovery steam generators" are "used wholly or partly" as qualifying pollution control property. There is no option under the statute for TCEQ to determine that equipment listed in 11.31(k) is not pollution control equipment. When the Legislature added subsection 11.31(k) in 2007, the purpose was to list equipment that was <u>predetermined</u> to be pollution control equipment and the only evaluation that needed to occur was to determine the percentage of the equipment that qualified as pollution control property. The question is not "whether the equipment is pollution control property", but instead should be "how much is pollution control property."

Furthermore, under Texas Tax Code § 11.31(m), the Executive Director "shall" review applications for equipment listed under § 11.31(k) and make a determination whether the equipment is wholly or partly pollution control property within 30 days. Furthermore, the statute states that the Executive Director "shall" take action on that determination and notify the

applicant and the appraisal district of the determination. Thus, the Executive Director must review and issue a use determination within 30 days for those applications which were submitted after House Bill 3732 became effective, and which include equipment that is listed under Texas tax Code § 11.31(k).

As indicated earlier, the Executive Director received one of Cottonwood's applications on July 5, 2011 and three subsequent applications on December 2, 2011. Despite the statute's clear requirement that the Executive Director act within 30 days on applications for equipment listed under § 11.31(k), in this instance, the Executive Director waited over six months for three of the applications and over a year on the first application after the applications were submitted to make a determination. By failing to act within 30 days, the Executive Director violated the statutory requirements of Texas Tax Code § 11.31(m) and effectively prevented the Applicant from receiving a tax exemption for which it met all of the statutory requirements.

#### IV. Texas Tax Code Requires Consistency

a) The Executive Director's Use Determination Violates the Equal and Uniform Tax Mandate in Texas Constitution art. VIII, Section 1(a).

In Texas, all taxation must be equal and uniform. Tex. Const. art. VIII, Section 1(a).<sup>6</sup> The Texas Constitution's equal and uniform standard is strikingly incorporated into Section 11.31:

"(d) The commission shall adopt rules to implement this section. Rules adopted under this section must . . . (2) be sufficiently specific to ensure that determinations are equal and uniform . . ."

The constitutional mandate requires that a tax must treat taxpayers within the same class alike, and that any classifications must not be unreasonable, arbitrary, or capricious. The standard for determining equal and uniform taxation is a two-part test: "(1) whether the tax's classification is reasonable; and (2) whether, within the class, the legislation *operates equally*." 8

A tax cannot satisfy the second prong of the equal and uniform standard unless the value of the tax base is ascertained by the same standard for all taxpayers within each class. ("The standard of uniformity prescribed by the Constitution being the value of property, taxation can not be in the same proportion to the value of the property, unless the value of all property is

<sup>&</sup>lt;sup>6</sup> The Article VIII, Section 1 of the Texas Constitution provides: "(a) Taxation shall be equal and uniform. (b) All real property and tangible personal property in this State, unless exempt as required or permitted by this Constitution, whether owned by natural persons or corporations, other than municipal, shall be taxed in proportion to its value, which shall be ascertained as may be provided by law."

<sup>&</sup>lt;sup>7</sup> Hurt v. Cooper, 110 S.W.2d 896, 901 (Tex. 1937).

<sup>&</sup>lt;sup>8</sup> R.R. Comm 'n of Tex. v. Channel Indus. Gas, 775 S.W.2d 503, 507 (Tex. App.—Austin 1989, writ denied) (emphasis added).

<sup>&</sup>lt;sup>9</sup> Lively v. Missouri, K. & T. Ry., 120 S.W. 852, 856 (Tex. 1909).

ascertained by the same standard."). In other words, when taxing value (i.e., the tax base), the Legislature may not say that the same economic value is more for some taxpayers than it is for other taxpayers.

In the instant case the Commission has granted 100 percent exemption for heat recovery steam generator systems that are substantively identical to Applicant's to approximately twenty other taxpayers. There has been no reasoned justification for the distinction based on any alleged differences in design or use or location of the equipment. The negative use determination made against Applicant is arbitrary in that there is no substantive distinction between the use or pollution reducing benefit of the HRSGs and the multiple other applicants whose systems have been granted 100% positive use determinations by the Commission. Such random enforcement causes 11.31 to operate unequally and in direct violation of the equal and uniform tax mandate.

## b) The Commission Does Not Have Authority to Make a 100 Percent Negative Use Determination Under Section 11.31 of the Texas Tax Code

Subsections 11.31(k) and (m) direct that the Commission "shall determine" that "heat recovery steam generators" and "enhanced steam turbine systems" are "used wholly or partly" as qualifying pollution control property. Tex. Tax Code Section 11.31(k) & (m).

The Determination's negative use finding is facially and patently in violation of the Texas Tax Code.

The applications requested a 42.99 percent positive use determination that the Applicant's four HRSGs and associated dedicated ancillary systems were used in accordance with the following statutory standard set forth in Section 11.31<sup>10</sup> of the Texas Tax Code:

"A person is entitled to an exemption from taxation of all or part of real and personal property that the person owns and that is used wholly or partly as a facility, device, or method for the control of air, water, or land pollution."

In this section, "facility, device, or method for the control of air, water, or land pollution" means land that is acquired after January 1, 1994, or any structure, building, installation, excavation, machinery, equipment, or device, and any attachment or addition to or reconstruction, replacement, or improvement of that property, that is used, constructed, acquired, or installed *wholly or partly to* 

<sup>&</sup>lt;sup>10</sup> Section 11.31 of the Texas Tax Code is authorized by Article VIII, Section I-1 of the Texas Constitution, which provides: "(a) The legislature by general law may exempt from ad valorem taxation all or part of real and personal property used, constructed, acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution. (b) This section applies to real and personal property used as a facility, device, or method for the control of air, water, or land pollution that would otherwise be taxable for the first time on or after January 1, 1994. . . . (Added Nov. 2, 1993.)"

meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution."

The Application and Attachment I hereto establish the factual basis that the HRSGs qualify as a device, or method for the control of pollution.

Despite the clear factual record that HRSGs control pollution, the Executive Director's determination summarily finds, without explanation or substantive reasoning, that the HRSGs will be subject to a negative use determination because they are "used solely for production." The facts do not support the Determination, and there is no reasonable interpretation of Section 11.31 that would support the Determination.

Section 11.31 must be construed to give effect to the Legislature's intent. An agency or court should first attempt to determine this intent from the actual language used by the Legislature. That is, an agency or court should first look to the plain, ordinary meaning of the statute's words. Most importantly, "[i]f a statute is clear and unambiguous, [the courts] apply its words according to their common meaning without resort to rules of construction or extrinsic aids." This is true even when the agency charged with enforcing the statute seeks to apply a different construction. 14

Further, Texas Attorney General Opinion JC-0372 (2001) has expressly opined to the Chair of the Texas Natural Resource Conservation Commission that "methods of production" can and do qualify as exempt pollution control property:

"Section 11.31 is *broadly written*, and we believe its plain meaning is clear. It embraces any property, real or personal, "that is used wholly or partly as a facility, device, or method for the control of air, water or land pollution..." (emphasis added).

"Next, we consider whether section 11.31 excludes from its scope pollution-reducing *production* equipment. Significantly, the statute applies to property used "wholly or partly" for pollution control. See id. § 11.31(a). To qualify for the exemption, property must be used "wholly or partly" to meet or exceed environmental rules. See id. § 11.31(b). The term "wholly" clearly refers to property that is used only for pollution control, such as an add-on device. See

<sup>&</sup>lt;sup>11</sup> See Tex, Gov't Code § 312,005; Gilbert v. El Paso County Hosp. Dist., 38 S.W.3d 85 (Tex. 2001).

<sup>&</sup>lt;sup>12</sup> See Tex. Gov't Code § 312.002(a); Am. Home Prods. Corp. v. Clark, 38 S.W.3d 92, 95-96 (Tex. 2000); Crimmins v. Lowry, 691 S.W.2d 582, 584 (Tex. 1985).

<sup>&</sup>lt;sup>13</sup> In Re Nash, 220 S.W.3d 914, 917 (Tex. 2007) (emphasis added).

See Pretzer v. Motor Vehicle Bd., 138 S.W.3d 908, 914-15 (Tex. 2004); Barchus v. State Farm Fire & Cas. Co., 167 S.W.3d 575, 578 (Tex. App.—Houston [14th Dist.] 2005, pet denied).

Merriam Webster's Collegiate Dictionary 1351 (10th ed. 1993) (defining "wholly" to mean "to the full or entire extent: ... to the exclusion of other things"). The term "partly," however, embraces property that has only some pollution-control use. See id. at 848 (defining "partly" to mean "in some measure or degree"). This broad formulation clearly embraces more than just add-on devices. Furthermore, that statute clearly embraces not only "facilities" and "devices" but also "methods" that prevent, monitor, control, or reduce pollution. "Methods" is an extremely broad term that clearly embraces means of production designed, at least in part, to reduce pollution. See id. at 732 (defining "method" to include "a way, technique, or process of or for doing something").

The HRSGs and associated dedicated ancillary systems are clearly used to comply with environmental laws and to control pollution and qualify for exemption under any valid rule or convention of statutory construction.

## c) Failure To Comply With Commission Rules and the Texas Administrative Procedures Act.

The Commission cannot arbitrarily and capriciously create and enforce a new internally derived formula for heat recovery steam generators resulting in a drastic increase in the amount of property taxes assessed against Applicant, without, at the very least, <sup>15</sup> adhering to the Texas Administrative Procedure Act (the "APA").

In brief, the APA requires state agencies to follow certain formal procedures before adopting and applying any "rule." Among other requirements, the APA requires state agencies to provide notice of any intent to promulgate a new rule, to publish the contemplated new rule, and to invite public comment with respect to the new rule. As the Texas Supreme Court explained: "In this way, the APA assures that the public and affected persons are heard on matters that affect them and receive notice of new rules."

In addition to the APA requirements regarding the procedures that must be applied by state agencies when adopting and applying any "rule," Texas courts frequently require that an agency explain its reasoning when it "appears to the reviewing court that an agency has departed from its earlier administrative policy or there exists an apparent inconsistency in agency

<sup>&</sup>lt;sup>15</sup> And subject to the statutory arguments set forth below.

<sup>&</sup>lt;sup>16</sup> The APA defines the term "rule" to mean "a state agency statement of general applicability that... implements, interprets, or prescribes law or policy." Tex. Gov't Code § 2001.003(6).

<sup>&</sup>lt;sup>17</sup> See Rodriguez v. Service Lloyds Ins. Co., 997 S.W.2d 248, 255 (Tex. 1999), reh'g of cause overruled (Sept. 9, 1999); see also Tex. Gov't Code § 2001.004(2) (additionally requiring agencies to "index, cross-index to statute, and make available for public inspection all rules and other written statements of policy or interpretations that are prepared, adopted, or used by the agency in discharging its functions").

<sup>&</sup>lt;sup>18</sup> Id.

determinations." By issuing a 100 percent use determination and ultimately issuing a negative use determination, the TCEQ Executive Director's staff has departed from its earlier policy with regard to the evaluation of HRSGs. Furthermore, as explained earlier, TCEQ has issued 100 percent use determinations for other HRSGs, but issued negative use determinations for those applications that were appealed. In doing so, the TCEQ provided a one sentence explanation stating, "[HRSGs] are used solely for production and, therefore, are not eligible for a positive use determination."

In this case the Commission clearly failed to follow the procedures of the Texas APA in reaching and applying its interpretation of Section 11.31(k) and (m) of the Texas Tax Code. Because the Commission failed to promulgate any rule or other formal statement expressing its new interpretation of Section 11.31(k) and (m) of the Texas Tax Code, its interpretation violates the APA and must be disregarded.

Further, the Determination appears to represent a sea change in the Commission's interpretation of Section 11.31 without any change to its Section 11.31 rules. The Commission's attempt to make a material change in policy retroactively without compliance with the APA is an invalid rule under the APA under the analysis in *El Paso Hospital District v. Texas Health and Human Services Commission*, 247 S.W.3d 709 (Tex. 2008).<sup>19</sup>

In *El Paso Hospital District*, the Texas Health and Human Services Commission ("HHSC") adopted a regulation that established a "base year" for gathering claims data to be used in setting certain Medicaid hospital payment rates. Several hospitals sought a declaratory judgment that the cutoff rule was invalid under the APA, because HHSC did not adopt the rule in accordance with the APA. HHSC argued that the cutoff date was not a rule itself but rather an interpretation of a rule. The Texas Supreme Court held that the agency-applied cutoff date was an invalid rule because the agency did not follow the proper rule-making procedures contained in the APA. The Texas Supreme Court stated:

"HHSC argues that it complied with these statutes, and that the February 28 cutoff is not a rule itself, but rather its interpretation of the base-year rule. The Hospitals disagree, arguing the February 28 cutoff falls squarely within the APA's definition of a rule. We agree with the Hospitals. Under the APA, a rule: (1) is an agency statement of general applicability that either "implements, interprets, or prescribes law or policy" or describes [HHSC'S] "procedure or practice requirements;" (2) "includes the amendment or repeal of a prior rule;" and (3) "does not include a statement regarding only the internal management or organization of a state agency and not affecting private rights or procedures." TEX. GOV'T CODE §2001.003(6)(A)-(C). El Paso Hospital District at 714.

<sup>&</sup>lt;sup>19</sup> El Paso Hospital District v. Texas Health and Human Services Commission, 247 S.W.3d 709 (Tex. 2008).

The Commission's new internal formula or reasoning that resulted in the Determination interprets or prescribes law or policy and amends or repeals positions previously applied by the Commission.

The violation of APA requirements is especially egregious in this case given that Section 11.31(l) of the Texas Tax code mandates that the TCEQ, "by rule shall update the list adopted under Subsection (k)" and then makes clear that "[a]n item may be removed from the list if the commission finds compelling evidence to support the conclusion that the time does not provide pollution control benefits." No APA rulemaking procedure has been followed to remove HRSGS or enhanced steam turbine systems from Section 11.31(k) and it is inconceivable how the TCEQ could find that "compelling evidence exists to support the conclusion that [HRSGs] do not provide pollution control benefits."

## V. The Record Supports a Positive Use Determination and Clearly Contradicts a Negative Use Determination

#### a) Pollution Control Property

The only question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether *any* percentage above zero is appropriate. The Applicant's HRSGs can be defined as pollution control property based on the prevention of NOx emissions from natural gas use efficiencies. Under Tax Code § 11.31(a), "[a] person is entitled to an exemption from taxation of all or part of real and personal property that the person owns and that is used wholly or partly as a facility, device, or method for the control of air, water, or land pollution." (emphasis added). The statute defines "a facility, device, or method for the control of air, water, or land pollution" as:

"[a] structure, building, installation excavation, machinery, equipment or device, and any attachment or addition to or reconstruction, replacement or improvement of that property, that is used, constructed, acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution."

Thus to qualify as pollution control property, the equipment or structure must control pollution and must meet or exceed applicable environmental protection regulations.

#### b) Method of Pollution Control

The use of otherwise wasted heat in the turbine exhaust gas within the HRSG results in higher plant thermal efficiency (net power output of the plant divided by the heating value of the fuel), compared to other power generation technologies. A plant incorporating a combined cycle

design emits less NO<sub>x</sub> per pound of fossil fuel combusted due to the incorporation of both the Brayton and Rankine Thermodynamic cycles within plant design operations

Specifically, the equipment's increased thermal efficiency, as compared to a traditional steam boiler unit, reduces the fuel needs for the same power outputs, while emitting no additional air emissions. It is important to note that the lower fuel consumption associated with increased fuel conversion efficiency not only reduces NOx emissions, but also reduces other emissions such as CO<sub>2</sub>.

## c) HRSGs are Used to Meet Certain New Source Performance Standards for Electric Generating Facilities

As cited in the Application, Title 40 of the Code of Federal Regulations ("CFR") subpart 60.44Da establishes New Source Performance Standards ("NSPS") for emissions of air contaminants for electric utility steam generating facilities.

Subpart § 60.40Da(e)(1) specifically lists HRSGs as subject to the NSPS requirements in 60.44Da, stating:

(i.e. heat recovery steam generators used with duct burners) associated with a stationary combustion turbine that are capable of combusting more that 73 MW (250MMBtu/H) heat input of fossil fuel are subject to this subpart.

Therefore, Applicant's four HRSGs are subject to the performance standards for air emissions as established within the Subpart Da. Specifically, they are subject to Section 60.44Da Standards for nitrogen oxides (NO<sub>x</sub>) which states:

Except as provided in paragraph (h) of this section, on and after the date on which the initial performance test is completed or required to be completed...no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which construction...commenced before July 10, 1997 any gases that contain NO<sub>x</sub> (expressed as NO2) in excess of the applicable emissions limit in paragraphs (a)(1) and (2) of this section.

Furthermore, the Applicant's HRSGs were designed to meet the national primary and secondary ambient air quality standards ("NAAQS") for oxides of nitrogen (with nitrogen dioxide as the indicator) as set forth in 40 CFR § 50.11

Monitoring data from the Barney Davis Power Plant during both pre and post-repowering of that plant confirm the assumptions regarding the air emissions reductions per pound of fossil fuel use. This data is set out in Attachment "I."

#### VI. TCEQ's Role as a Technical Advisor to the State in Administering the Prop 2 Program Includes Factoring in Ever-Evolving Pollution Control Policies, not Tax Policy

The clear structure and purpose of Section 11.31 of the Texas Tax Code has for nearly two decades been for the TCEQ to serve as the scientific and technical arbiter for determining the types of equipment that qualify as pollution control property. The TCEQ's role has always been to implement an efficient, consistent and scientifically accurate process to determine technologies that meet the statutory definition of pollution control property. Section 11.31 directs the TCEQ to determine whether particular items of property are used for pollution control based on its specialized knowledge and expertise.

As previously noted, the Executive Director had issued 100 percent positive use determinations for twenty-six of the HRSG applications, six of which were appealed by local taxing units. However, the application at issue in this appeal was one the Executive Director left pending for several years before making a final determination. On July 10, 2012, the Executive Director issued negative used determinations for all of the pending HRSG applications as well as the six applications that were appealed. The negative use determination was issued to Cottonwood despite its applications being substantively identical to the applications that received 100 percent positive use determinations.

#### Conclusion

As noted at the outset of this brief, the question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether any percentage above zero is appropriate. As set forth fully above, aplicable law, prior precedent, and the record in this case demand that a positive use determination b issued. Thus, this appeal should be granted and this matter should be remanded back to the Executive Director for a determination that the property in question is eligible for a positive use determination.

#### Respectfully submitted,

Michael J. Nasi

State Bar No. 00791335

Steve Moore

State Bar No. 14377320

Benjamin Rhem

State Bar No. 24065967

JACKSON WALKER L.L.P.

100 Congress Avenue, Suite 1100

Austin, Texas 78701

512-236-2200

512-236-2002 (Facsimile)

mnasi@jw.com

ATTORNEYS FOR

Cottonwood Energy Company LP

#### **CERTIFICATE OF SERVICE**

I hereby certify that on the 31st day of July, 2012, a copy of the foregoing was provided by electronic mail or U.S. First Class Mail to the attached mailing list:

#### **Mailing List**

Daniel Long Texas Environmental Law Division MC 173 P. O. Box 13087 Austin, Texas 78711-3087 512/239-0600 FAX 512/239-0606 Courtesy Copy via U.S. Mail

Susana M. Hildebrand, P.E. TCEQ Chief Engineer's Office MC 168 P. O. Box 13087 Austin, Texas 78711-3087 512/239-4900 FAX 512/239-6188 Courtesy Copy via U.S. Mail

Chance Goodin TCEQ Chief Engineer's Office MC 206 P. O. Box 13087 Austin, Texas 78711-3087 512/239-6336 FAX 512/239-6188 Courtesy Copy via U.S. Mail

Robert Martinez
TCEQ Environmental Law Division MC 173
P. O. Box 13087
Austin, Texas 78711-3087
512/239-0600 FAX 512/239-0606

Courtesy Copy via U.S. Mail

Blas Coy
TCEQ Office of Public Interest Counsel
MC 103
P. O. Box 13087
Austin, Texas 78711-3087

Courtesy Copy via U.S. Mail

# Attachment A

### DUFF&PHELPS

TCEQ Cashier's Office - MC-214 Building A 12100 Park 35 Circle Austin, TX 78753

June 30, 2011

Re: Application for Use Determination for Air Pollution Control Property Located at Cottonwood Energy Center in Newton County, Texas

Enclosed please find one application (the "Application") for property tax exemption for Air Pollution Control Property located at Cottonwood Energy Center (the "Facility") in Newton County, Texas. A copy of the Application has been provided for the appraisal district.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier III Application. Submission of this Application is required as a process step in the TCEQ's pollution control certification process for tax exemption of certain assets used in pollution control capacities within the Facility. As outlined by the application instructions, the fee for this Tier III Application is \$2,500. Please find enclosed a check for the \$2,500. Tier III Application Fee.

The Application can be summarized as follows:

**Property** 

Description

**Estimated Cost** 

Tier III.

Unit 1 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems

\$ 26,043,320

Please send one copy of the completed property tax exemption Use Determination to the following address:

Mr. Greg Maxim
Duff & Phelps LLC
919 Congress Avenue, Suite 1450
Austin, TX 87801

TCEQ Cashler's Office June 30, 2011 Page 2 of 2

If you have any questions regarding the Application or the information supplied within the Application, please contact me, Greg Maxim, Director, Duff & Phelps LLC, at (512) 671-5580 or by e-mail at gregory.maxim@duffandphelps.com.

Very truly yours,

**Gregory Maxim** 

Director

Specialty Tax

Enclosures

cc: Ms. Kathryn Tronsberg Macciocca (Duff & Phelps, LLC)

## **Texas Commission on Environmental Quality**

## Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

	Section 1. Eligibility	
	1. Is the property/equipment subject to any lease, lease-to-own agreement, or environmentive grant? Yes \( \subseteq \) No \( \subseteq \)	nmental
	2. Is the property/equipment used solely to manufacture or produce a product or proservice that prevents, monitors, controls, or reduces air, water or land pollution?	vide a
	Yes 🔲 No 🖂	
	3. Was the property/equipment acquired, constructed, installed, or replaced before J 1994? Yes ☐ No ☒	anuary 1,
	If the answer to any of these questions is 'Yes', then the property/equipment is not elitax exemption under this program.	gible for a
	Section 2. General Information	
· 	1. What is the type of ownership of this facility?	
	Corporation Partnership Utility Sole Proprietor Limited Partner Other: Limited	Liability
-	2. Size of Company: Number of Employees	
	1 to 99 ☐ 2,000 to 4,999 ☐ 2,000 to 4,999 ☐ 5,000 or more ☐	
	3. Business Description: (Briefly describe the type of business or activity at the facilit	y)
	Natural Gas-Fired Electric Power Generation	
	<ol> <li>Provide the North American Industry Classification System (NAICS) six-digit code facility. 221122 - Electric Power Generation, fossil fuel</li> </ol>	for this

S	ection 3. Type of Application and Fee	
1:	Select only one:	
· .	Tier I – Fee: \$1,000 $\square$ Tier III – Fee: \$2,500 $\boxtimes$	. ·
2,	Payment Information:	. :
	Check/Money Order/Electronic Payment Receipt Number: Payment Type: Check Payment Amount: \$2,500 Name on payment: Duff & Phelps Total Amount: \$2,500	
	OTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt ong with the application to cover the required fee.	
S	ection 4. Property/Equipment Owner Information	) }
1.	Company Name of Owner: Cottonwood Energy Company LP	Ì
2.	Mailing Address: 976 County Road 4213	
3.	City, State, Zip: Deweyville, TX 77614	
4.	Customer Number (CN): CN602765687	e.
5.	Regulated Entity Number (RN):RN100226109	
6.	Is this property/equipment owned by the CN listed in Question 4? Yes ☒ No ☐	
	If the answer is 'No,' please explain: N/A	
7.	Is this property/equipment leased from a third party? Yes ☐ No ☒	
. •	If the answer is 'Yes,' please explain: N/A	• .
8.	Is this property/equipment operated by the RN listed in Question 5? Yes ⊠ No □	
. ·.	If the answer is 'No,' please explain: N/A	
S	ection 5. Name of Property/Equipment Operator (If	<del></del>
di	fferent from Owner)	
1.	Company Name: N/A	
2.	Mailing Address: N/A	e.
3.	City, State, Zip: N/A	
4.	Customer Number (CN): N/A	· · ·
5.	Regulated Entity Number (RN):N/A	
S	ection 6. Physical Location of Property/Equipment	; ;
1,	Name of Facility or Unit where the property/equipment is physically located:	-;-
	Cottonwood Energy Center	
2.	Type of Mfg. Process or Service: Natural Gas-Fired Electric Power Generation	: •
	international de tragger de la companya de la comp La companya de la co	:
Use Effe	Determination for Pollution Control Property Application—Form TCEQ-00611 ctive December 2010 Page 2 of 7	·

3.	Street Address: 976 County Road 4213
4.	City, State, Zip: Deweyville, TX 77614
S	ection 7. Appraisal District with Taxing Authority
1	Appraisal District: Newton County
2.	District Account Number(s): 9900015-0805153
S	ection 8. Contact Name
1	Company Name: Duff & Phelps, LLC
2	First Name of Contact: Greg
3	Last Name of Contact: Maxim
4	Salutation; Mr. 🖂 Mrs. 🔲 Ms. 🗀 Dr. 🗀 Other:
5.	
6.	Mailing Address: 919 Congress Avenue, Suite 1450
7.	City, State, Zip: Austin, TX 78701
-8	Phone Number/Fax Number: (P) 512-671-5580; (F) 512-351-7911
9.	Email Address: Gregory.maxim@duffandphelps.com
10.	Tracking Number (optional): CC-2011-48
S	ection 9. Property/Equipment Description, Applicable Rule
	nd Environmental Benefit
	r each piece, or each category, of pollution control property/equipment for which a use termination is being sought, answer the following questions.
	tach additional response sheets to the application for each piece of integrated pollution contro operty/equipment if a use determination is being sought for more than one (1) piece.
G	eneral Information
1.	Name the property/equipment:
	Unit 1 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems
2.	Is the property/equipment used 100% as pollution control equipment? Yes \( \subseteq \) No \( \subseteq \)
	If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control: N/A. See Calculation of Percentage of pollution control Property in attached Cost Analysis Procedure ("CAP") Model.
3.	Does the property/equipment generate a Marketable Product? Yes ⊠ No □
	If the answer is 'Yes,' describe the marketable product: Electricity
4.	What is the appropriate Tier I Table or Expedited Review List number? ERL #8
5.	Is the property/equipment integrated pollution control equipment? Yes 🗵 No 🗌
	Determination for Pollution Control Property Application—Form TCEQ-00611 ctive December 2010 Page 3 of 7

If the answer is 'No,' separate applications must be filed for each piece of property/equipment.

6. List applicable permit number(s) for the property/equipment: Title V Operating Permit 02338

#### **Incremental Cost Difference**

- 7. Is the Tier I Table percentage based on the incremental cost difference? Yes \( \subseteq \) No \( \subseteq \) N/A \( \subseteq \) If the answer is 'Yes,' answer the following questions:
- 8. What is the cost of the new piece of property/equipment? N/A
- 9. What is the cost of the comparable property/equipment? N/A
- 10. How was the value of the comparable property/equipment calculated? N/A

#### **Property/Equipment Description**

11. Describe the property/equipment. (What is it? Where is it? How is it used?)

#### Background: Cottonwood Energy Center

The Cottonwood Energy Center (the "Facility") is a natural gas-fired, combined cycle power generating facility located in Deweyville, Newton County, Texas. Four GE 7-FA combustion turbines are routed to four Foster Wheeler heat recovery steam generators ("HRSGs"), which provide steam to four Alstom steam turbine-generator sets. The Facility began commercial operation in December 2003. It has a base load capacity of 1,260 MW. The Facility serves the SERC Reliability Corporation region.

#### Pollution Control Property Description - Cottonwood Unit 1 HRSG

The pollution control property described in this Application is the Unit 1 HRSG and dedicated ancillary system (the "PC Property") installations.

#### Cottonwood Unit 1 HRSG

The Facility consists of a combined-cycle gas turbine power plant with four (4) gas Combustion Turbines ("CTs") each equipped with HRSGs and dedicated ancillary systems necessary to capture heat from the CTs' exhaust and convert it into electrical power. The Unit 1 HRSG captures and utilizes the waste heat of combustion from the Unit 1 CT exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electric power at the Facility in addition to the electric power generated by the CT alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the Unit 1 HRSG creates a thermal efficiency benefit for the Facility. Specifically, the use of waste heat in the Unit 1 CT exhaust gas results in the conversion of approximately 50% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the CT's alone's use of the fuel. Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly NO<sub>x</sub> emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; and allowing the subject PC Property to appear on the Expedited Review List.

Cooling Tower

Condenser

Exhaust

Electricity

Steam Turbine

Fuel

Gas Turbine

Generator

Compressor

Intake Air

The Figure below is representative of a simplified combined-cycle plant process flow.

Please see the Cost Analysis Procedure ("CAP") Model attached for the calculation of the percentage of the subject pollution control property eligible for property tax exemption.

#### **Applicable Rule**

12. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level.

The PC Property was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides ("NOx") for Electric Utility Steam generating units for New Source Performance Standards ("NSPS")".

As well, the PC Property allows emissions to meet or exceed Best Available Control Technology emission limitations established in Federal Operating Permit #02338. Per 30 Texas Administrative Code ("TAC") §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit.

#### **Environmental Benefit**

13. What is the anticipated environmental benefit related to the construction or installation of the property/equipment?

The PC Property reduces the formation of and/or controls the emission of  $NO_x$  and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility.

#### Section 10. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Please see the simplified Process Flow Diagram above for a representation of the combined-cycle power plant.

#### Section 11. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Please see the attachment to this application for the Cost Analysis Procedure ("CAP") Calculations.

#### Section 12. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Heat-Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems	-N/A	-42.99%-	-\$-60,584,465
Property:			
Property:			3
		Total:	\$ 26,043,320

Attach additional response sheets to the application if more than three (3) pieces.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

#### Section 13. Certification Signature

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Greg Maxim

Date: 6/30/2011

Signature:

Title: Director

Company Name: Duff & Phelps, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to \$2,000, or a prison term of two to 10 years and a fine of up to \$5,000.

Source Lagand								,
· ·								
٠.	Calcu	laled/	usum	otton			,	 
DAP .	D&P	VAB 8	ander	UNESH	mate	٠.		
CW	Colle	nweed	Cient	Pmy	idod (	nta.		
нн	Heren	fjub B	e turn	Gus	Prisin	o i	:	
DO TAC:		C Cha				-		

Plant Design Profile		`:•		Conversion Factors	151	Reshonite Assumptions		Levelized Cost of
PC Property PO Property PO Property Capital Cost (SIR PO Property Capital Cost (SIR PO Property Respectly (MM) PO Property Net Annual Gase PO Property Net Annual Gase Plant Copacity Pactor Plant Heed Rate (blowwhy) Plant Heed Rate (blowwhy)	aration Capacity (KYA) amilion Capacity (KYA)	\$ 60,564,465 \$ 200 292 606,493,135 609,483 31,65% 7,503 9,01	Source DW C C CW O CW CW CW	Holes (Year kwanter brigg wheur bturnmisto	027,8 000,1 02.2 050,000,1 000,000,1	Discount Rate Periods Proposity Fixed O.S.M. Cost. (\$FMV-yz) Por Proposity Variable Cost. (\$FMV-yz) PO Proposity Variable Cost. (\$FMV-yz) PO Proposity Variable Cost. (\$FMV-yz) BERG Clearisty Pricing (\$FMV-yz) Riskost Right.	10.0% D&P 49 CAV \$ 4.53 CAV \$ 2.00 HH 5 0.48 CVV \$ 0.00 C \$ 25.32 SNL 10% S0 TAG	Capital Recovery LODE (\$VIVA) "See Lensited Cool of
Capital Cost Old ("COO") Comparable Technology Gos Comparable Technology Dailing Capacity Factor Capacity ("MW")		\$ * 0%	1.1					

Collenwood Enougy Consussy, LP Collenwood Enougy Cesher 1,300 HPM 445 Consignation Grambland Cycles Fewer i Mandra County, Toxes This III Cost Analysis Procedure ("CAP") Calculations June 39, 2011

II. Coal Analysis Procedure ("GAP")

[(PCF x CCN) - CCD - MP)]

A. Definitions (provided by TCFQ)<sup>[5]</sup>

1. Production Capacity Factor ("PCF")

The ratio of the capacity of the existing equipment or process to the capacity of the new equipment or process to the capacity of the new equipment.

Capital Cost New (CCR)
 CCN is the permated tolat capital cost of the new equipment or process.

Capital Cost Old ("OCO")
COS is the cost of comparable explained or a comparable process without the pulleton cortrol.
The standards for calculating COS are:

 If a comparable explained without the polistion control feature is on the market by the U.S., then use the giverage market price of the innex recent pariseration of technology guest be used.

4.5 if the conditions in varietie 0.1 do not apply and the company is replacing an existing unit that already has received a politive use determination, the company shall use the CCO from the application for the previous the determination.

<sup>93</sup> If the conditions in variable 3.1 and 3.2 do not apply and the company is system; an unduling unit, than the company virall convert the original pool of the unit to today's observe by using a published addressly specific standard. If the production capacity of the new equipment or process is lower than the production capacity of the old equipment or process. So were that the production capacity of the old equipment or process a consist of the production capacity of the old equipment or process a COQ is driving by the PCF to adjust COQ to reflect the same capacity as COR.

<sup>24</sup> If the conditions in vertables 3.1, 3.2 and 3.3 do not apply, and the company can obtain an extracts to manufacture the elements of the property without the publisher control leafure. Then are average assimated control representation than unit must be used. The company of the extraction of technology. A copy of the extracts must be provided with the workspeed technique the specific source of the information.

4. Manishable Product (\*MP\*)
Anything produced or recovered using politiken control properly that is soild as a populate, is accountabled for later use, or is used as rew material in energial-during process. Manishable product beduce, but is not limited to, anything recovered or produced using the prilitien control properly soid, braked, encountable for later use, or used in a manishable groups (appeared to the product of the product or details or excess or emissions intervenes the result from that shade from other placetion or other placetion control properly.

Marketable Product Value ("AP'V")
The unifoldable product value may be calculated in one of the ways:

1. The fall value of the product product produced by the squipment for one year puriods. Typicolly, the most recent three-year average price of the material as sold on the infants theoretic used in the calculation. If the price varies from shall use state, the applicant shall energiate an average price of the material as sold on the infants when otherwised.

If the male half is used as an intermediate material is a production process, then the value assigned to the material for intermediate purposes may be used. It is the responsibility of the applicant to show that the intermally assigned value is comparable to the valve entigned by other artifact produces of the product.

Direct Conits of Production ("DCP")
The costs directly stituted to the production of the product, including cav materials, clorage, transportation, and personnel, but excluding non-auditorials, production of the pro

in Factor
 The estimated useful like to years of the equipment that is being evaluated for a use determined.

B. f Fector Year One.

B. Interest Rabi 10%.

19 Tale 30, Yexas Administrative Code, Chapter 17

Production Capacity of Existing Equipment or Process
Production Capacity of New Equipment or Process Production Capacity Factor ("PCP") NPVMP

(PCF x CCN) - CCO - NPVMP))

G. CAP Formulus for PG Property

B. CAP Formulas (provided by TOEQ)

Marketeble Product Value ("MPV") Electricity Price (#/MWn)

Direct Cost of Production ("DCP") - LCOE n' KWh poryeer

Cost K Capital K Capital Recovery Fixed O&M Costs

Hours per Year X Capital Recovery Capital Costs

Fixed O&M Costs

Fixed O& LODE × |leat ) TCEQ Use Determination Application Section 12, use:
Use Percent: 42,09%
Estimated Coller Value \$ 60,684,465

Eligible HRSG Costs = (Partial Lise Determination % x PC Property Cost)

A200%

26,043,320

Out & Phabs | Cost Analytic Procedure

5/30/2011

1.000 x \$60,584,465

#### ATTACHMENT A

Taxpayer:

Cottonwood Energy Company, LP

Plant:

Cottonwood Energy Center

Plant Summary:

1,260 MW 4x4 Configuration Combined Cycle Power Plant (2003)

Plant Location:

Newton County, Texas

Project:

Tier III Cost Analysis Procedure ("CAP") Calculations

Date: June 30, 2011

Rev:

#### Levelized Cost of Energy ("LCOE") Model<sup>[1]</sup>

#### Formulas

Capital Recovery Factor ("CRF")

$$= \frac{i \times (1+i)^n}{(1+i)^n \times 1}$$

#### Calculations

Capital Recovery Factor

10.23%

LCOE (\$/kWh)

0.03079

Note: The Levelized Cost of Energy is a calculation developed by the United States Department of Energy's National Renewable Energy Lab to determine the cost of generating energy (electricity) using the design or performance criteria for a specific power generation unit. The website above gives a more detailed description of the model and its development.

<sup>[1]</sup> http://www.nrel.gov/analysis/lcoe\_documentation.html

#### ATTACHMENT

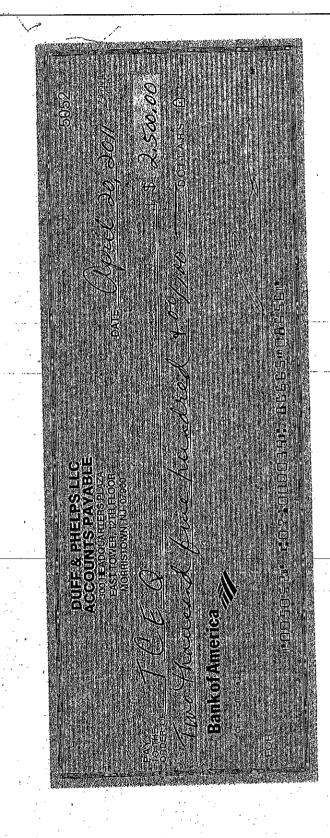
Electricity - PV Galculations

Difference	Period		Interest Rate	PV.	Period
\$3,664.	099	1	1,10	\$	3,330,999
\$3,664	099	2	1.21	\$	. 3,028,181
\$3,664		3	1,331	\$	2,752,892
\$3,664		4	1,4641	\$	2,502,629
\$3,664,	099	5	1,61051	\$	2,275,117
\$3,664.		6	1,771561	\$	2,068,288
\$3,664,	099	7	1,9467171	\$	1,880,262
\$3,664,		8	2.14358881	\$	1,709,329
\$3,664,		9	2.357947691	\$	1,553,936
\$3,664.		10	2.59374246	\$	1,412,669
\$3,664,	099	: 11	2.853116708	\$ :	1,284,244
\$3,664,		. 12	3.138428377		1,167,498
\$3,664,		- 13	3.452271214		1,061,359
\$3,664,		14	3,797498338	\$	964.87
\$3,664,		15	4.177248169	\$	877,150
\$3,664		16	4.594972986	\$	797,418
\$3,664.		17	5,054470285	\$	724,922
\$3,664		18	5,559917313	\$	659,020
\$3,664,		19	6,115909045	.\$	599.109
\$3,664		20	6.727499949	-\$	544,64
\$3,664,		21	7,400249944	8	495,132
\$3,664.		. 22	8.140274939	\$ .	450,120
\$3,664		23	8.954302433		409,200
\$3,664,		24	9.849732676	\$	372,000
\$3,864,		25	10.83470594	\$	338,182
\$3,664,		28	11,91817654		307 438
\$3,664,		27	13,10999419		279,489
\$3,664,		28			254 08
\$3,664,		29	15.86309297	\$	230.98
\$3,664,		30	17.44940227	\$	209,984
NPVMP:		-		Ś	34.541.144

Duff & Phelps | Present Value Calculations

6/30/2011

Page 6 of 6



# Attachment B

### DUFF&PHELPS

TCEQ Cashier's Office - MC-214 Building A 12100 Park 35 Circle Austin, TX 78753 December 2, 2011

Re: Application for Use Determination for Air Pollution Control Property Located at Cottonwood Energy Center in Newton County, Texas

Enclosed please find one application (the "Application") for property tax exemption for Air Pollution Control Property located at Cottonwood Energy Center (the "Facility") in Newton County, Texas. A copy of the Application has been provided for the appraisal district.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier III Application. Submission of this Application is required as a process step in the TCEQ's pollution control certification process for tax exemption of certain assets used in pollution control capacities within the Facility. As outlined by the application instructions, the fee for this Tier III Application is \$2,500. Please find enclosed a check for the \$2,500 Tier III Application Fee.

The Application can be summarized as follows:

Property Description Estimated Cost

Tier III Unit 2 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems \$26,043,320

Please send one copy of the completed property tax exemption Use Determination to the following address:

Mr. Greg Maxim Duff & Phelps LLC 919 Congress Avenue, Suite 1450 Austin, TX 87801 TCEQ Cashler's Office June 30, 2011 Page 2 of 2

If you have any questions regarding the Application or the information supplied within the Application, please contact me, Greg Maxim, Director, Duff & Phelps LLC, at (512) 671-5580 or by e-mail at gregory.maxim@duffandphelps.com.

Very truly yours,

Gregory Maxim

Director

Specialty Tax

Enclosures

cc: Ms. Kathryn Tronsberg Macciocca

(Duff & Phelps, LLC)

#### **Texas Commission on Environmental Quality**

# Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

S	ection 1. Eligibility	,	
1.	Is the property/equipment s incentive grant? Yes N	ubject to any lease, lease-to-ow ™o ⊠	n agreement, or environmental
2.	Is the property/equipment uservice that prevents, monito	sed solely to manufacture or pr ors, controls, or reduces air, wat	oduce a product or provide a ter or land pollution?
	Yes 🗌 No 🛛		
3.	Was the property/equipmen 1994? Yes ☐ No ☒	t acquired, constructed, installe	d, or replaced before January 1,
	the answer to any of these que cexemption under this progra		ty/equipment is not eligible for a
S	ection 2. General I	nformation	
1.	What is the type of ownership	p of this facility?	
	Corporation	Partnership ☐ Limited Partner ☐	Utility  Other: Limited Liability
2.	Size of Company: Number of	f Employees	
	1 to 99 🛮 100 to 499 🔲	500 to 999 🔲 1,000 to 1,999 🔲	2,000 to 4,999 5,000 or more
3.	Business Description: (Brief	ly describe the type of business	or activity at the facility)
	Natural Gas-Fired Electr	ic Power Generation	
4.		Industry Classification System	

S	ection 3. Type of Application and Fee
	Select only one:
	Tier I − Fee: \$150 ☐ Tier II − Fee: \$1,000 ☐ Tier III − Fee: \$2,500 ☒
2.	Payment Information:
	Check/Money Order/Electronic Payment Receipt Number: Payment Type: Check 5119 Payment Amount: \$2,500 Name on payment: Duff & Phelps Total Amount: \$2,500
N( al	OTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt ong with the application to cover the required fee.
S	ection 4. Property/Equipment Owner Information
1.	Company Name of Owner: Cottonwood Energy Company LP
2,	Mailing Address: 976 County Road 4213
3,	City, State, Zip: Deweyville, TX 77614
4.	Customer Number (CN): CN602765687
5.	Regulated Entity Number (RN):RN100226109
6.	Is this property/equipment owned by the CN listed in Question 4? Yes $\boxtimes$ No $\square$
	If the answer is 'No,' please explain: N/A
7.	Is this property/equipment leased from a third party? Yes 🔲 No 🖂
	If the answer is 'Yes,' please explain: N/A
8.	Is this property/equipment operated by the RN listed in Question 5? Yes 🛛 No 🗌
	If the answer is 'No,' please explain: N/A
	ection 5. Name of Property/Equipment Operator (If
di	fferent from Owner)
1.	Company Name: N/A
2.	Mailing Address: N/A
3.	City, State, Zip: N/A
4.	Customer Number (CN): N/A
5.	Regulated Entity Number (RN):N/A
S	ection 6. Physical Location of Property/Equipment
1.	Name of Facility or Unit where the property/equipment is physically located:
	Cottonwood Energy Center
2.	Type of Mfg. Process or Service: Natural Gas-Fired Electric Power Generation

3.	Street Address: 976 County Road 4213
4.	City, State, Zip: Deweyville, TX 77614
S	ection 7. Appraisal District with Taxing Authority
1.	Appraisal District: Newton County
2.	District Account Number(s): 9900015-0805153
Se	ection 8. Contact Name
1.	Company Name: Duff & Phelps, LLC
2.	First Name of Contact: Greg
3.	Last Name of Contact: Maxim
4.	Salutation: Mr. Mrs. Ms. Dr. Other:
5.	Title: Director
6.	Mailing Address: 919 Congress Avenue, Suite 1450
7.	City, State, Zip: Austin, TX 78701
8.	Phone Number/Fax Number: (P) 512-671-5580; (F) 512-351-7911
9.	Email Address: Gregory.maxim@duffandphelps.com
10.	Tracking Number (optional): CC-2011-48
Se	ection 9. Property/Equipment Description, Applicable Rule,
	nd Environmental Benefit
det	r each piece, or each category, of pollution control property/equipment for which a use termination is being sought, answer the following questions.
Att pro	tach additional response sheets to the application for each piece of integrated pollution control operty/equipment if a use determination is being sought for more than one (1) piece.
G	eneral Information
1.	Name the property/equipment:
	Unit 1 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems
2.	Is the property/equipment used 100% as pollution control equipment? Yes 🔲 No 🛛
	If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control: N/A. See Calculation of Percentage of pollution control Property in attached Cost Analysis Procedure ("CAP") Model.
3.	Does the property/equipment generate a Marketable Product? Yes 🔯 No 🔲
	If the answer is 'Yes,' describe the marketable product: Electricity
4.	What is the appropriate Tier I Table or Expedited Review List number? ERL #8
5.	No.
Use	Determination for Pollution Control Property Application—Form TCEQ-00611

If the answer is 'No,' separate applications must be filed for each piece of property/equipment.

6. List applicable permit number(s) for the property/equipment: Title V Operating Permit 02338

#### **Incremental Cost Difference**

- 7. Is the Tier I Table percentage based on the incremental cost difference? Yes \( \subseteq \) No \( \subseteq \) N/A \( \subseteq \) If the answer is 'Yes,' answer the following questions:
- 8. What is the cost of the new piece of property/equipment? N/A
- 9. What is the cost of the comparable property/equipment? N/A
- 10. How was the value of the comparable property/equipment calculated? N/A

#### **Property/Equipment Description**

11. Describe the property/equipment. (What is it? Where is it? How is it used?)

#### Background: Cottonwood Energy Center

The Cottonwood Energy Center (the "Facility") is a natural gas-fired, combined cycle power generating facility located in Deweyville, Newton County, Texas. Four GE 7-FA combustion turbines are routed to four Foster Wheeler heat recovery steam generators ("HRSGs"), which provide steam to four Alstom steam turbine-generator sets. The Facility began commercial operation in December 2003. It has a base load capacity of 1,260 MW. The Facility serves the SERC Reliability Corporation region.

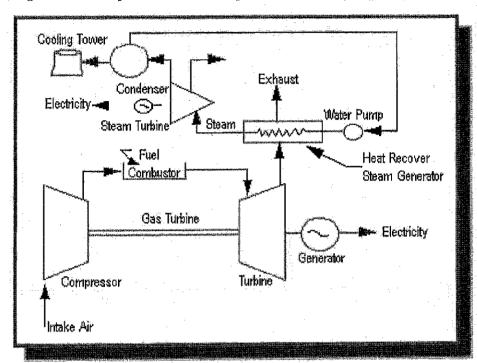
#### Pollution Control Property Description - Cottonwood Unit 2 HRSG

The pollution control property described in this Application is the Unit 2 HRSG and dedicated ancillary system (the "PC Property") installations.

#### Cottonwood Unit 2 HRSG

The Facility consists of a combined-cycle gas turbine power plant with four (4) gas Combustion Turbines ("CTs") each equipped with HRSGs and dedicated ancillary systems necessary to capture heat from the CTs' exhaust and convert it into electrical power. The Unit 2 HRSG captures the waste heat of combustion from the Unit 2 CT exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electric power at the Facility in addition to the electric power generated by the CT alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the Unit 2 HRSG creates a thermal efficiency benefit for the Facility. Specifically, the use of waste heat in the Unit 2 CT exhaust gas results in the conversion of approximately 50% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the use of the fuel by these CTs alone. Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly  $NO_x$  emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; thus supporting the subject PC Property's inclusion on the Expedited Review List.



The Figure below is representative of a simplified combined-cycle plant process flow.

Please see the Cost Analysis Procedure ("CAP") Model attached for the calculation of the percentage of the subject pollution control property eligible for property tax exemption.

#### **Applicable Rule**

12. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level.

The PC Property was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides ("NOx") for Electric Utility Steam generating units for New Source Performance Standards ("NSPS")".

As well, the PC Property allows emissions to meet or exceed Best Available Control Technology emission limitations established in Federal Operating Permit #O2338. Per 30 Texas Administrative Code ("TAC") §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit.

#### **Environmental Benefit**

13. What is the anticipated environmental benefit related to the construction or installation of the property/equipment?

The PC Property reduces the formation of and/or controls the emission of  $NO_x$  and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility.

#### Section 10. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Please see the simplified Process Flow Diagram above for a representation of the combined-cycle power plant.

#### Section 11. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Please see the attachment to this application for the Cost Analysis Procedure ("CAP") Calculations.

#### Section 12. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems	N/A	42.99%	\$ 60,584,465
Property:			
Property:			
		Total:	\$ 26,043,320

Attach additional response sheets to the application if more than three (3) pieces.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

#### Section 13. Certification Signature

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Greg Maxim

Date: 12/2/2011

Signature:

Title: Director

Company Name: Duff & Phelps, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to \$2,000, or a prison term of two to 10 years and a fine of up to \$5,000.

Cottonwood Energy Company, LP.

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PC Property Capital Cost (RMV)
PC Property Valva Capisally (MMV)
PC Property Net Annual Generation Capisalty (MMV)
PC Property Net Annual Generation Capisalty (MMV)
Pant Capital Performati

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Capital Cost Old ("CCCO")
Comparable Technology Cost
Comparable Technology.
Destin Capardy Factor
Capacity ("MW")

Levelized Gost of Energy (\*\* CDE\*) Rodel Outputs Capital Recovery Factor ( CRF.) LODE (SKAWA) Spurse CW CW CW SW SW SW

10.23% 0.03078

Cost Analysis Proceeding Bodel 4714年2日日日刊 黎

Cottonwood Energy Compeny, LP Cottonwood Energy Center

1.280 MW 444 Configuration Combined Cycle Power Plact. (2003) Newton County, Texas THE III COSA Arabicos: Procedure ("CAP") Calculations December 2. 2011 Taxpayer:
Flant:
Plant: Summary:
Plant:Location:
Plant:Location:
Responsible:
Respo

A Cost Analysis Procedure ("CAP")

((PCF x CCN)- CCO - MP)

A. Dafinitions (provided by TCEQ)

. Production Capacity Factor (\*PCF")

The ratio of the capacity of the existing equipment or process to the capacity of the new equipment or in

Capital Dost New ("CCN")
 CCN is the estimated total capital cost of the new edition or process.

3. Capital Cost Old ("CCO")

use the average market price of the most recent generation of lechnology must be used. 22 if the conditions in variable 3.1 do not apply and the company is replacing an existing unit this aiready has received a positive use determination, this conspany shall use the CCC from the application for the previous use determination.

If the conditions in variable 3.1 and 3.2 do not apply and the company is replacing an existing und, then the company shall convert the original constraint to trocks colorism by using a published intensy security and the track of the relative to the confidence appeared in the respect of searched. If the production respectly of the relative outperprenants in process CCO is olivised by the Pref. to adjust CCO equipment or process is flower than 11th production respectly of the old equipment or process CCO is olivised by the Pref. to adjust CCO to reflect the same capacity as CCN \*\* if the conditions in variables 3.1. 3.2 and 5.3 do not apply, and the company can obtain an estimate to manufacture the afternative equipment without the publicion control feature, then an avorage estimated cost to manufacture the unit must be used. The comparable unit must be buffer control feature, then an avorage estimated cost to manufacture the unit must be used. The comparable unit must be the more recent generators of bethrology. A copy of the estimate must be proyided with the worksheel including the specific source of the information.

Anything produced or hazavered using pollution control property that is seaff as a product, is accumulated the father use, or is used as rewraterial in a refuscious father than the control produced using the pollution control property sold, traded, another label to the seaf the mentional property sold, traded, another father use, or used in a manufacturing process (including at earlievent facility.) Marketable grouduct does not include any subsider or enrission allowerces that result from insulation of the pollution control property. Marketable Product ("MP")

Markstable Product Value ("MEV")

The markstable product volue may be calculated in one of two weys:

The markstable product goodsced by the equipment for one year periods. Typically, the most recent three-year average price of the market should be used in the calculation. If the price years from state-to-frate, the applicant shall calculation. If the price years from state-to-frate, the applicant shall calculate an average

If the material is used as an interineidate material in a production process then the value assigned to the material for internal accounting
process may be used. It is the responsibility of the applicant to show that the internally assigned value is comparathe to the value assigned by other shifter producers of the product.

Direct Costs of Productions ("DCP")

The costs directly attributed to the production of the product, includ costs, such as overhead and depreciation.

7. n Factor The estimated useful fite in years of the equipment that is being

9. interest Rate 10%.

8. 1 Factor Year One.

Pf Title 30. Texas

B, CAP Formulas (provided by TCEQ)

(PCF x CCN) - CCO - NPVMP) Padial Use Determination

Production Capacity of Existing Equipmen Production Capacity of New Equipmen Production Capacity Factor (PCF7) Where:

And where: NPVMP

∑ n MPV-PG

Ed (1+thterest Rate) MPV-PC

C. CAP Formulas for PC Property

#With per Year Electricity Price (SYMWh) Marketable Product Value ("MPV")

x KWII per year 300 Direct Cost of Production (TDCP7)

Fuel Heat Capital Recovery Titled 03M
Factor Costs Capacity

X Factor × Hours per Year E to 100T

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Page 6 ನ್

Cottonwood Energy Company I.P.		Cost Atakais Procedure Model
		A TA A अभिक्रा छ
Taxpayer: Cottonwood Energy Company, LP Plant: Cottonwood Energy Center		
Plant Summary: 1,280 MW 4x4 Configuration Combined Cycle Power Plant (2003) Plant Location: Newton Courty, Texas		
Project Ter III Cost Analysis Procedure (TCAPT) Calculations Date: December 2, 2017		•
Rev: 0		
# Cost Analysis Procedure ("CAP") Catrolations for Cottonwood Unit 2 HRGG		Formula: (FOF x CON) - CCO - NEVNIP
A. Marketable Product Value ("MPV")		רירוע
Electricity Price S Plant MWh Year	(E) MPV	
\$35.32 S. X. 808.453 WWh. = \$2	\$28,557,751	
B. Production Cost ("PC")		
Levelized Cost of Energy S Plant KWh (100er) KWh Year	<u>8</u>	

\$0,0308



Cottonwood Energy Company, LP

Page 5 of 6

26 040,320

				850.554.455	9-1	Parizal Use Deformination Calculation	(PGF x CGN)	1,02D x \$560,584,465 500,584,465	문학생은 HRSG Costs (Partial Use Dejermination % x PC Property Cost)
Taxpeyer: Cottonwood Energy Company, LP. Plant Summany: 1,280 MW 4x4 Configuration Contibined Cycle Pawer Plant (2003) Flant Location: Newton County, Texas Fract Location: Newton County, Texas Fract: December 2, 2011 Rev: 3	C. Production Capacity Pactor ["PCF"]	Production Capacity of Existing Equipment or Process  PCF Production Capacity of New Equipment or Process	2382 MWV*34,65% = 1,000	D. Capital Cossi New ("CON") PO Proberty  B. Capital Cossi New ("CON")	E. Capital Cost Old ("CCO") Comparable Technology				TOEO Use Determination Archication, Section 12, use Use Percent 42,99% Estimated Dollar Value \$ 60,524,455

Puff Phelps 1 Cottonwood Unk 2 HRSG CAF Calculations

#### ATTACHMENT B

Taxpayer:

Gottonwood Energy Company, LP

Plant:

Cottonwood Energy Center

Plant Summary:

1,260 MW 4x4 Configuration Combined Cycle Power Plant (2003)

Plant Location:

Newton County, Texas

Project:

Tier III Cost Analysis Procedure ("CAP") Calculations

Date:

December 2, 2011

Rev: (

#### Levelized Cost of Energy ("LCOE") Model<sup>[1]</sup>

#### Formulas

Capital Recovery Factor ("CRF")

$$= \frac{i \times (1+i)^n}{(1+i)^n - 1}$$

Heat Rate

#### Calculations

Capital Recovery Factor

10.23%

LCOE (\$/kWh)

\$ 0.03079

CRF

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Note: The Levelized Gost of Energy is a calculation developed by the United States Department of Energy's National Renewable Energy Lab to determine the cost of generating energy (electricity) using the design or performance criteria for a specific power generation unit. The website above gives a more detailed description of the model and its development.

<sup>[1]</sup> http://www.nrel.gov/analysis/lcoe\_documentation.html

Page 6 of 6

12/2/2011

Cottonwood Energy Company, LP

Cost Analysis Procedure Wodel ATTACHMENT B

Electricity - PV Calculations

Difference	Period		Interest Rate	PV . Pe	- Period	
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# Attachment C

#### DUFF&PHELPS

TCEQ Cashier's Office - MC-214 Building A 12100 Park 35 Circle Austin, TX 78753 December 2, 2011

Re: Application for Use Determination for Air Pollution Control Property Located at Cottonwood Energy Center in Newton County, Texas

Enclosed please find one application (the "Application") for property tax exemption for Air Pollution Control Property located at Cottonwood Energy Center (the "Facility") in Newton County, Texas. A copy of the Application has been provided for the appraisal district.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier III Application. Submission of this Application is required as a process step in the TCEQ's pollution control certification process for tax exemption of certain assets used in pollution control capacities within the Facility. As outlined by the application instructions, the fee for this Tier III Application is \$2,500. Please find enclosed a check for the \$2,500 Tier III Application Fee.

The Application can be summarized as follows:

Property Description Estimated Cost

Tier III Unit 3 Heat Recovery Steam Generator ("HRSG") \$26,043,320

Please send one copy of the completed property tax exemption Use Determination to the following address:

Mr. Greg Maxim
Duff & Phelps LLC
919 Congress Avenue, Suite 1450
Austin, TX 87801

TCEQ Cashler's Office December 2, 2011 Page 2 of 2

If you have any questions regarding the Application or the information supplied within the Application, please contact me, Greg Maxim, Director, Duff & Phelps LLC, at (512) 671-5580 or by e-mail at gregory.maxim@duffandphelps.com.

Very truly yours,

Gregory Maxim

Director

Specialty Tax

Enclosures

cc: Ms. Kathryn Tronsberg Macciocca

(Duff & Phelps, LLC)

#### **Texas Commission on Environmental Quality**

## Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

S	ection 1. Eligibility		
1.	Is the property/equipment subincentive grant? Yes \( \square\) No	oject to any lease, lease-to-ow	n agreement, or environmental
2,	Is the property/equipment use service that prevents, monitors	ed solely to manufacture or p s, controls, or reduces air, wa	roduce a product or provide a iter or land pollution?
	Yes 🗌 No 🖂		
3.	Was the property/equipment a 1994? Yes ☐ No ☒	acquired, constructed, install	ed, or replaced before January 1,
	the answer to any of these quest a exemption under this program		rty/equipment is not eligible for a
S	<u>ection 2. General In</u>	formation	
1.	What is the type of ownership	of this facility?	
	Corporation ☐ Sole Proprietor ☐ Partnership ☐	Limited Partner ☐ Utility ☐	Other: Limited Liability Corporation
2.	Size of Company: Number of I	Employees	
	1 to 99 ⊠ 100 to 499 □	500 to 999	2,000 to 4,999 5,000 or more
3.	Business Description: (Briefly	describe the type of business	or activity at the facility)
	Natural Gas-Fired Electric	e Power Generation	
4.	Provide the North American Infacility. 221122 - Electric Po	ndustry Classification System ower Generation, fossil f	n (NAICS) six-digit code for this uel

S	ection 3. Type of Application and Fee
1.	Select only one:
	Tier I – Fee: $\$150$ $\square$ Tier II – Fee: $\$1,000$ $\square$ Tier III – Fee: $\$2,500$ $\boxtimes$
2.	Payment Information:
	Check/Money Order/Electronic Payment Receipt Number: Payment Type: Check SII& Payment Amount: \$2,500 Name on payment: Duff & Phelps Total Amount: \$2,500
No al	OTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt ong with the application to cover the required fee.
S	ection 4. Property/Equipment Owner Information
1.	Company Name of Owner: Cottonwood Energy Company LP
2,	Mailing Address: 976 County Road 4213
3.	City, State, Zip: Deweyville, TX 77614
4.	Customer Number (CN): CN602765687
5.	Regulated Entity Number (RN):RN100226109
6.	Is this property/equipment owned by the CN listed in Question 4? Yes $oxed{\boxtimes}$ No $oxed{\square}$
	If the answer is 'No,' please explain: N/A
7.	Is this property/equipment leased from a third party? Yes $\square$ No $\boxtimes$
	If the answer is 'Yes,' please explain: N/A
8.	Is this property/equipment operated by the RN listed in Question 5? Yes $oxed{\boxtimes}$ No $oxed{\square}$
	If the answer is 'No,' please explain: N/A
	ection 5. Name of Property/Equipment Operator (If ifferent from Owner)
1.	Company Name: N/A
2.	Mailing Address: N/A
3.	City, State, Zip: N/A
4.	Customer Number (CN): N/A
5.	Regulated Entity Number (RN):N/A
S	ection 6. Physical Location of Property/Equipment
1.	Name of Facility or Unit where the property/equipment is physically located:
	Cottonwood Energy Center
2.	Type of Mfg. Process or Service: Natural Gas-Fired Electric Power Generation

3. Street Address: 976 County Road 4213 4. City, State, Zip: Deweyville, TX 77614 Section 7. Appraisal District with Taxing Authority 1. Appraisal District: Newton County 2. District Account Number(s): 9900015-0805153 Section 8. Contact Name 1. Company Name: Duff & Phelps, LLC 2. First Name of Contact: Greg 3. Last Name of Contact: Maxim 4. Salutation; Mr. Mrs. Mrs. Dr. Dr. Other: 5. Title: Director Mailing Address: 919 Congress Avenue, Suite 1450 7. City, State, Zip: Austin, TX 78701 8. Phone Number/Fax Number: (P) 512-671-5580; (F) 512-351-7911 9. Email Address: Gregory.maxim@duffandphelps.com 10. Tracking Number (optional): CC-2012-03 Section 9. Property/Equipment Description, Applicable Rule, and Environmental Benefit For each piece, or each category, of pollution control property/equipment for which a use determination is being sought, answer the following questions. Attach additional response sheets to the application for each piece of integrated pollution control property/equipment if a use determination is being sought for more than one (1) piece. **General Information** 1. Name the property/equipment: Unit 3 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems 2. Is the property/equipment used 100% as pollution control equipment? Yes  $\square$  No  $\boxtimes$ If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control: N/A. See Calculation of Percentage of pollution control Property in attached Cost Analysis Procedure ("CAP") Model. 3. Does the property/equipment generate a Marketable Product? Yes  $\boxtimes$  No  $\square$ 

If the answer is 'Yes,' describe the marketable product: Electricity

4. What is the appropriate Tier I Table or Expedited Review List number? ERL #8
5. Is the property/equipment integrated pollution control equipment? Yes ☑ No ☐

If the answer is 'No,' separate applications must be filed for each piece of property/equipment.

6. List applicable permit number(s) for the property/equipment: Title V Operating Permit O2338

#### **Incremental Cost Difference**

- 7. Is the Tier I Table percentage based on the incremental cost difference? Yes \( \subseteq \) No \( \subseteq \) N/A \( \subseteq \) If the answer is Yes,' answer the following questions:
- 8. What is the cost of the new piece of property/equipment? N/A
- 9. What is the cost of the comparable property/equipment? N/A
- 10. How was the value of the comparable property/equipment calculated? N/A

#### **Property/Equipment Description**

11. Describe the property/equipment. (What is it? Where is it? How is it used?)

#### Background: Cottonwood Energy Center

The Cottonwood Energy Center (the "Facility") is a natural gas-fired, combined cycle power generating facility located in Deweyville, Newton County, Texas. Four GE 7-FA combustion turbines are routed to four Foster Wheeler heat recovery steam generators ("HRSGs"), which provide steam to four Alstom steam turbine-generator sets. The Facility began commercial operation in December 2003. It has a base load capacity of 1,260 MW. The Facility serves the SERC Reliability Corporation region.

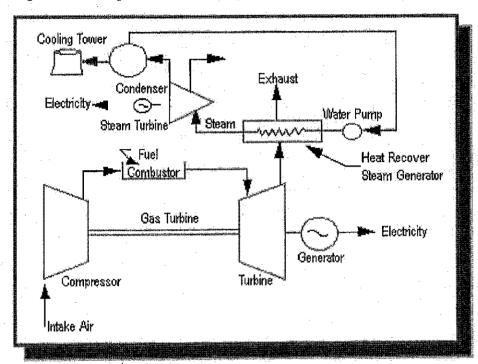
#### Pollution Control Property Description – Cottonwood Unit 3 HRSG

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#### Cottonwood Unit 3 HRSG

The Facility consists of a combined-cycle gas turbine power plant with four (4) gas Combustion Turbines ("CIs") each equipped with HRSGs and dedicated ancillary systems necessary to capture heat from the CIs' exhaust and convert it into electrical power. The Unit 3 HRSG captures the waste heat of combustion from the Unit 3 CT exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electric power at the Facility in addition to the electric power generated by the CT alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the Unit 3 HRSG creates a thermal efficiency benefit for the Facility. Specifically, the use of waste heat in the Unit 3 CT exhaust gas results in the conversion of approximately 50% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the use of the fuel by these CTs alone. Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly  $NO_x$  emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; thus supporting the subject PC Property's inclusion on the Expedited Review List.



The Figure below is representative of a simplified combined-cycle plant process flow.

Please see the Cost Analysis Procedure ("CAP") Model attached for the calculation of the percentage of the subject pollution control property eligible for property tax exemption.

#### **Applicable Rule**

12. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level.

The PC Property was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides ("NOx") for Electric Utility Steam generating units for New Source Performance Standards ("NSPS")".

As well, the PC Property allows emissions to meet or exceed Best Available Control Technology emission limitations established in Federal Operating Permit #O2338. Per 30 Texas Administrative Code ("TAC") §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit.

#### **Environmental Benefit**

13. What is the anticipated environmental benefit related to the construction or installation of the property/equipment?

The PC Property reduces the formation of and/or controls the emission of  $NO_x$  and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility.

#### Section 10. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Please see the simplified Process Flow Diagram above for a representation of the combined-cycle power plant.

#### Section 11. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Please see the attachment to this application for the Cost Analysis Procedure ("CAP") Calculations.

#### **Section 12. Property Categories and Costs**

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems	N/A	42.99%	\$ 60,584,465
Property:			
Property:			
		Total:	\$ 26,043,320

Attach additional response sheets to the application if more than three (3) pieces.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

#### **Section 13. Certification Signature**

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Greg Maxim

Date: 12/2/2011

Signature:

Title: Director

Company Name: Duff & Phelps, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to \$2,000, or a prison term of two to 10 years and a fine of up to \$5,000.

Cottonwood Energy Company, LP

	Calculated Assumption	DZP VAS Standard(Estyrate	Cattonwood Clean Provided Data	Heavy Huth Natural Gas Pricing	30 TAC Chapter 17
Source Leger	Q.	480	Ž.	£	30 TAO

PC Property			Source	Hourstear
P.C. Pregenty Capital Cost	11	S0.584.465	ŧ	KINDON
PC Property Capital Cost (SNA)	69	208	U	Brigg
P.C. Property Capacity (MW)		292	Š	Sinour
P.C. Property Net Annual Generation Capacity (KWII)		868,493,135	O	Distriction
PC Property Net Against Generation Capacity (MWIN)		508,493	ø	
Plant Capacity Pactor		31,65%	ð	
Flant Heat Ride (Dhukwa)		7,503	Š	
DEST THE NAME COMPANY (2012)		0.01	t	

Levelbad Cast at Energy ("LCOE") Model Outputs Capital Receivery Factor ("CRF") LODE (SRAW)

8.750 1,396 2.20 3.600 1,380,900

Comparable Technology Design Caparity Factor Capacity (34197)

ATTACKMENTS

Cost Authorit Procedure Machi

rwood Energy Company, LP rwood Energy Center

MW 4%4 Configuration Combined Cycle Power Plant (2003) won County, Texas Taxpayer: Plant: Plant Summary

rats Frocedure ("CAP") Calculations Tier III Cost Analysk December 2, 2011

II. Cost Analysis Procedum ("CAP")

POF X CONL OCO - MP ) A. Definitions (provided by TCEQ)<sup>(2)</sup>

Proteincion Capacity Factor (PCCF)
 The raiso of the capacity of the existing equipment or process, for the capacity of the new equipment or process.

Capital Cost New ("CCN")
 CCN is the estimated total capital cost of the new equipment or process.

Capital Cost Old ("CCC!)

COO is the post of comparable equipment or a comparable process without the position costrol.

The standards for calculating CCC are:

\*\*If comparable equipment without the position costrol feature is on the narket in the U.S., then use the average market price.

of the most recent generation of fechnology must be used.

12 if the conditions in variable 3,1 and 3,2 do not apply and the company is replacing an exclang unit, then the company shall convert the original coat of the unit to today's deliars by using a published industry specific standard. If the production capacity or the new equipment or process is lower than the production capacity of the old equipment or process ICOD is divided by the PCF to adjust CCO. 14 % the conditions in variable 3.1 do not apply and the company is replacing an existing unit that already has received a positive lise determination, the company shall use the CQO from the application for the previous use determination.

to reflect the same capacity as CCN.

<sup>34</sup> if the conditions in variables 3.1, 3.2 and 3.3 do not apply, and the company can obtain an estimate to manufacture the alternative equipment without the postucion of setue, then an average estimated toot to manufacture the unit must be used. The comparable unit must be the most ascert generation of technology. A copy of the estimate must be provided with the worksheet including the specific source of the information.

Marketable Product (TMP)

Anything practicated or procurement using pollution-countrol property that is sool as a product, is accumulated for fattor use, or is dried as raw material in a maximal accordance using the population control property sools, backedable product or soulties, but is not interest any impression or produced using the product drops property sools, based a committee for fatte use, or used in a manufacturing process (profucing at a different stalling). Marketable product dross not include any emission orecits or emission allowances that result from installation of the politism coutrol property.

Marketable Product Value ("MPV")

The markethle product value may be calculated it one of two ways.

1. The retal-value of the product produced by the equipment for no eyear periods. Typically, the most recent three-year assesses prize of the foreign produced by the equipment for no eyear periods. Typically, the most recent three products are sense of material as soft on the market should be used in the captured. If the price varies from state-hosfine, the applicant shift calculate as average and explain how the figures were determined

2. If the material is used as an intermediate material in a production process, then the value assigned to the material for informal accounting purposes may be used. It is the responsibility of the applicant to show that the intermally assigned value is comparable to the value assigned by other similar producers of the product.

Direct Costs of Production (1907)

dation, and personnel, but excluding non-cash The costs directly adminded to the production of the product, including costs, such as overhead and depreciation.

7. n Factor. The extimated useful life in years of the equipment that is being evaluated for a use

Year Che. 8. t Factor

9. Interest Rate 10%.

F Tale 30, Texas Actinistrative Code Chapter 17

8. CAP Formulas (provided by TCEQ)

(PCF x CCN) - 6CO - NPVARP)) Paries Use Determination

Production Capacity of Existing Equipment or Process Production Capacity of New Equipment or Process Production Capacity Factor ("PCF") Where:

Z n MPV - PC I=1 (1+ interest Rate)\* And where-THE STATE

C. CAP Forestas for PC Property

WWh per Year Electricity Price (\$7MWh) Marketable Product Value ("MPT/")

x kWh per year Direct Cost of Production ("DCP")

A Page X Fiver OMM
Costs
Capacity
Factor Capital Recovery Factor ĸ Hours per Year Capital Cost 300T

Out Phops I Colbinscod Units HRSG CAP Calculations

Cottonwood Energy Company, LP

Cottonwood Energy Company, LP
Cottonwood Energy Cariar
1,280 MW 444 Configuration Combined Cycle Power Plant (2003)
Newton County, Texas
Ter III Cost Analysis Procedure ("CAP") Celoulations

Taxpayer:
Plant Summary:
Pent Location:
Project:
Date:
Rev:

Duff Phebs 1 Cottonwood Ung 3 HRSG CAP Calculation

									II
(PCF x COV) - CCC - NPVMP								hat Present Value Markelable Product ("NPVAP") Calculation	V (1 + Interest Rate)
Formular		:	f .				1	Met Present	S) MPV E=1
		(\$)	\$28,657,781		(8) 53	524,353,532			
RSG			87.			25.		-	
A. Cost Analysis Procedure ("CAP") Calculations for Cottonwood Unit 3 HRSG	when the state of	S K Plant MWh K	S x 806,493 MWh =		KWh X Year	\$ kVvh x 808,493,135 Year			
A. Cost Analysis Procedure ("CA	A. Marketable Product Value ("MPV")	Electricity Price	885.32	B. Production Cost ("PC")	Lavelized Cost of Energy ("LCOE")	1 80000 08			

NPVMP (S)

334,541,145 NPVMP

\* [[해구 kg 40], then MP = 0,

\$28,557,789

Cottonwood Energy Company, LP

Catansacod Energy Company, LP
Cattansacod Energy Carder
Cattansacod Energy Carder
1, 250 Stlff 444 Canfiguration Combined Cycle Power Plant (2003)
Newton County, Texas
Terrill Cast Analysis Procedure ("CAP?) Calculations
Debasmier 2, 2011

Flant Summery:

Partial Use Determination		28, p.48, 320	
. It	11	ft	
CCO MP	590,564,465	Eligible HRSG Costs (Partial Use Determination % x PC Property Cost)	
(POF x DON)	1,000 × 560,584,465		
# *		# 1 # 1 # 1 # 1 # 1 # 1 # 1 # 1 # 1 # 1	
		NCEC Use Deferring the Application Seuten, 12, use Percent Las Percent Seuten S	

Partial Use Defermination Calculation

\$60,584,465

Ö

D. Capital Cost New ("CCN") PC Property

E, Capital Cost Old ("CCO") Comparable Technology

1,000

0 292 MW\*31,65%

PO

Production Capacity of Existing Equipment or Process Production Capacity of New Equipment or Process

C. Production Capacity Factor ("PCF")

#### ATTACHMENT B

Taxpayer:

Cottonwood Energy Company, LP

Plant:

Cottonwood Energy Center

Plant Summary:

1,260 MW 4x4 Configuration Combined Cycle Power Plant (2003)

Plant Location:

Newton County, Texas

Project:

Tier III Cost Analysis Procedure ("CAP") Calculations

Date:

December 2, 2011

Rev:

#### Levelized Cost of Energy ("LCOE") Model[1]

#### Formulas

#### Calculations

Capital Recovery Factor

10.23%

LCOE (\$/kWh)

\$ 0.03079

Note: The Levelized Cost of Energy is a calculation developed by the United States Department of Energy's National Renewable Energy Lab to determine the cost of generating energy (electricity) using the design or performance criteria for a specific power generation unit. The website above gives a more detailed description of the model and its development.

<sup>[1]</sup> http://www.nrel.gov/analysis/lcoe\_documentation.html

# Cottonwood Energy Company, LP

Electricity - PV Calculations

	34,541,145	w			NPVMP
	209,984	ω	17.44940227	30	\$3,664,099
	230,983	₩	15.86309297	29	\$3,664,099
٠.	254,081	↔	14.42099361	28	\$3,664,099
	279,489	₩	13,10999419	27	\$3,664,099
	307,438	ь	11.91817654	26	\$3,664,099
	338,182	<del>(/)</del>	10.83470594	25	\$3,664,099
	372,000	₩	9.849732676	24	\$3,664,099
	409,200	<del>(4)</del>	8.954302433	23	\$3,664,099
	450,120	↔	8.140274939	22	\$3,664,099
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	599, 109	69	6.115909045	5	\$3,664,099
	659,020	<del>(s)</del>	5.559917313	28	\$3,664,099
,	724,922	69	5.054470285	17	\$3,664,099
	797,415	<del>(/)</del>	4.594972986	16	\$3,664,099
	877,156	69	4,177248169	15	\$3,664,099
	964,872	<del>(/)</del>	3,797498336	4	\$3,664,099
	1,061,359	63	3,452271214	6	\$3,664,099
	1,167,495	(s)	3,138428377	12	\$3,664,099
	1,284,244	₩	2.853116706	£	\$3,664,099
	1,412,669	₩	2.59374246	10	\$3,664,099
	1,553,936	69	2.357947691	တ	\$3,664,099
	1,709,329	69	2.14358881	<b>∞</b>	\$3,664,099
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	2,275,117	Ġ	1,61051	(C)	\$3,664,099
	2,502,629	↔	1,4641	4	\$3,664,099
	2,752,892	<del>(/)</del>	1.331	ന	\$3,664,099
	3,028,181	<b>6</b> 7	72	7	\$3,664,099
	3,330,999	(r)	1.30		\$3,664,099
•	pod	PV - Period	Interest Rate	Períod	Difference

	THE POST OF THE PO
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## Attachment D

#### DUFF&PHELPS

TCEQ Cashler's Office - MC-214 Building A 12100 Park 35 Circle Austin, TX 78753 December 2, 2011

Re: Application for Use Determination for Air Pollution Control Property Located at Cottonwood Energy Center in Newton County, Texas

Enclosed please find one application (the "Application") for property tax exemption for Air Pollution Control Property located at Coltonwood Energy Center (the "Facility") in Newton County, Texas. A copy of the Application has been provided for the appraisal district.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier III Application. Submission of this Application is required as a process step in the TCEQ's pollution control certification process for tax exemption of certain assets used in pollution control capacities within the Facility. As outlined by the application instructions, the fee for this Tier III Application is \$2,600. Please find enclosed a check for the \$2,500 Tier III Application Fee.

The Application can be summarized as follows:

Property	Description	- A.H.	Estimated Cost
Tier III	Unit 4 Heat Recovery Steam Grand Dedicated Ancillary	≀\$G")	\$ 26,043,320

Please send one copy of the completed property tax exemption Use Determination to the following address:

Mr. Greg Maxim
Duff & Phelps LLC
919 Congress Avenue, Suite 1450
Austin, TX 87801

TCEQ Cashler's Office December 2, 2011 Page 2 of 2

If you have any questions regarding the Application or the information supplied within the Application, please contact me, Greg Maxim, Director, Duff & Phelps LLC, at (512) 671-5580 or by e-mail at gregory.maxim@duffandphelps.com.

Very truly yours,

Gregory Maxim

Director

Specialty Tax

Enclosures

cc: Ms. Kathryn Tronsberg Macclocca

(Duff & Phelps, LLC)

#### **Texas Commission on Environmental Quality**

### Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

S	ection 1. El	igibility		
1.	Is the property/e incentive grant?	equipment su Yes 🔲 No	bject to any lease, lease-to-	own agreement, or environmental
2.	Is the property/e service that prev	equipment us ents, monito	ed solely to manufacture or rs, controls, or reduces air,	r produce a product or provide a water or land pollution?
	Yes 🗌 No 🛛			
3.	Was the propert 1994? Yes ☐	y/equipment No ⊠	acquired, constructed, inst	alled, or replaced before January 1,
	the answer to any exemption unde			perty/equipment is not eligible for a
S	ection 2. Go	eneral II	nformation	·
1.	What is the type	of ownership	of this facility?	·
	Corporation  Sole Proprietor Partnership		Limited Partner ☐ Utility ☐	Other: Limited Liability Corporation
2.	Size of Company	: Number of	Employees	
	1 to 99 ⊠ 100 to 499 □		500 to 999 🗌 1,000 to 1,999 🔲	2,000 to 4,999 5,000 or more
3,	Business Descrip	otion: (Briefly	describe the type of busin	ess or activity at the facility)
	Natural Gas-F	ired Electri	c Power Generation	
4.	Provide the Nort facility. 221122	:h American l - Electric P	industry Classification Syst ower Generation, fossi	em (NAICS) six-digit code for this I fuel

S	ection 3. Type of Application and Fee
1.	Select only one:
	Tier I – Fee: \$150 $\square$ Tier II – Fee: \$1,000 $\square$ Tier III – Fee: \$2,500 $\boxtimes$
2.	Payment Information:
	Check/Money Order/Electronic Payment Receipt Number: Payment Type: Check 51/9 Payment Amount: \$2,500 Name on payment: Duff & Phelps Total Amount: \$2,500
N( ale	OTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt ong with the application to cover the required fee.
S	ection 4. Property/Equipment Owner Information
1.	Company Name of Owner: Cottonwood Energy Company LP
2.	Mailing Address: 976 County Road 4213
3.	City, State, Zip: Deweyville, TX 77614
4.	Customer Number (CN): CN602765687
5.	Regulated Entity Number (RN):RN100226109
6.	Is this property/equipment owned by the CN listed in Question 4? Yes 🖾 No 🗌
	If the answer is 'No,' please explain: N/A
7.	Is this property/equipment leased from a third party? Yes 🗌 No 🗵
	If the answer is 'Yes,' please explain: N/A
8.	Is this property/equipment operated by the RN listed in Question 5? Yes $\boxtimes$ No $\square$
	If the answer is 'No,' please explain: N/A
S	ection 5. Name of Property/Equipment Operator (If
di	ifferent from Owner)
1.	Company Name: N/A
2.	Mailing Address: N/A
3.	City, State, Zip: N/A
4.	Customer Number (CN): N/A
5.	Regulated Entity Number (RN):N/A
S	ection 6. Physical Location of Property/Equipment
1.	Name of Facility or Unit where the property/equipment is physically located:
	Cottonwood Energy Center
2.	Type of Mfg. Process or Service: Natural Gas-Fired Electric Power Generation

3. Street Address: 976 County Road 4213 City, State, Zip: Deweyville, TX 77614 Section 7. Appraisal District with Taxing Authority 1. Appraisal District: Newton County District Account Number(s): 9900015-0805153 Section 8. Contact Name 1. Company Name: Duff & Phelps, LLC 2. First Name of Contact: Greg Last Name of Contact: Maxim Salutation; Mr. Mrs. Mrs. Ms. Dr. Other: Title: Director Mailing Address: 919 Congress Avenue, Suite 1450 City, State, Zip: Austin, TX 78701 Phone Number/Fax Number: (P) 512-671-5580; (F) 512-351-7911 9. Email Address: Gregory.maxim@duffandphelps.com 10. Tracking Number (optional): CC-2012-04 Section 9. Property/Equipment Description, Applicable Rule, and Environmental Benefit For each piece, or each category, of pollution control property/equipment for which a use determination is being sought, answer the following questions. Attach additional response sheets to the application for each piece of integrated pollution control property/equipment if a use determination is being sought for more than one (1) piece. **General Information** 1. Name the property/equipment: Unit 4 Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems 2. Is the property/equipment used 100% as pollution control equipment? Yes ☐ No ☒ If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control: N/A. See Calculation of Percentage of pollution control Property in attached Cost Analysis Procedure ("CAP") Model. 3. Does the property/equipment generate a Marketable Product? Yes  $\square$  No  $\square$ If the answer is 'Yes,' describe the marketable product: Electricity 4. What is the appropriate Tier I Table or Expedited Review List number? ERL #8 5. Is the property/equipment integrated pollution control equipment? Yes 🛛 No 🗌

If the answer is 'No,' separate applications must be filed for each piece of property/equipment.

6. List applicable permit number(s) for the property/equipment: Title V Operating Permit 02338

### **Incremental Cost Difference**

- 7. Is the Tier I Table percentage based on the incremental cost difference? Yes \( \subseteq \) No \( \subseteq \) N/A \( \subseteq \) If the answer is Yes, answer the following questions:
- 8. What is the cost of the new piece of property/equipment? N/A
- 9. What is the cost of the comparable property/equipment? N/A
- 10. How was the value of the comparable property/equipment calculated? N/A

## **Property/Equipment Description**

11. Describe the property/equipment. (What is it? Where is it? How is it used?)

### Background: Cottonwood Energy Center

The Cottonwood Energy Center (the "Facility") is a natural gas-fired, combined cycle power generating facility located in Deweyville, Newton County, Texas. Four GE 7-FA combustion turbines are routed to four Foster Wheeler heat recovery steam generators ("HRSGs"), which provide steam to four Alstom steam turbine-generator sets. The Facility began commercial operation in December 2003. It has a base load capacity of 1,260 MW. The Facility serves the SERC Reliability Corporation region.

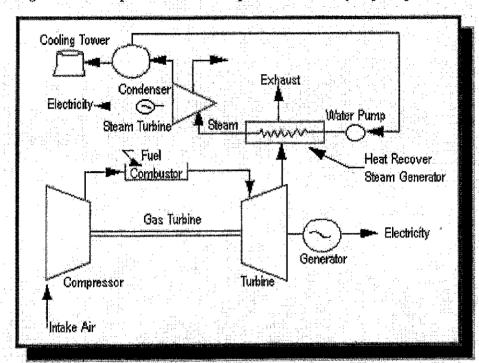
### Pollution Control Property Description - Cottonwood Unit 4 HRSG

The pollution control property described in this Application is the Unit 4 HRSG and dedicated ancillary system (the "PC Property") installations.

### Cottonwood Unit 4 HRSG

The Facility consists of a combined-cycle gas turbine power plant with four (4) gas Combustion Turbines ("CTs") each equipped with HRSGs and dedicated ancillary systems necessary to capture heat from the CTs' exhaust and convert it into electrical power. The Unit 4 HRSG captures the waste heat of combustion from the Unit 4 CT exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electric power at the Facility in addition to the electric power generated by the CT alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the Unit 4 HRSG creates a thermal efficiency benefit for the Facility. Specifically, the use of waste heat in the Unit 4 CT exhaust gas results in the conversion of approximately 50% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the use of the fuel by these CTs alone. Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly NO<sub>x</sub> emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; thus supporting the subject PC Property's inclusion on the Expedited Review List.



The Figure below is representative of a simplified combined-cycle plant process flow.

Please see the Cost Analysis Procedure ("CAP") Model attached for the calculation of the percentage of the subject pollution control property eligible for property tax exemption.

# **Applicable Rule**

12. What adopted environmental rule or regulation is being met by the construction or installation of the property/equipment? The citation must be to the subsection level.

The PC Property was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides ("NOx") for Electric Utility Steam generating units for New Source Performance Standards ("NSPS")".

As well, the PC Property allows emissions to meet or exceed Best Available Control Technology emission limitations established in Federal Operating Permit #02338. Per 30 Texas Administrative Code ("TAC") §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be included with the permit.

### **Environmental Benefit**

13. What is the anticipated environmental benefit related to the construction or installation of the property/equipment?

The PC Property reduces the formation of and/or controls the emission of  $NO_x$  and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility.

# Section 10. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the property/equipment.

Please see the simplified Process Flow Diagram above for a representation of the combined-cycle power plant.

# Section 11. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the application showing the calculations used to determine the partial-use percentage for the property/equipment.

Please see the attachment to this application for the Cost Analysis Procedure ("CAP") Calculations.

# Section 12. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
-Land:			
Property: Heat Recovery Steam Generator ("HRSG") and Dedicated Ancillary Systems	N/A	42.99%	\$ 60,584,465
Property:			
Property:			
		Total:	\$ 26,043,320

Attach additional response sheets to the application if more than three (3) pieces.

 $NOTE: Separate\ applications\ must\ be\ filed\ for\ each\ piece\ of\ nonintegrated\ pollution\ control\ property/equipment.$ 

# **Section 13. Certification Signature**

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Greg Maxim

Date: 12/2/2011

Signature:

Title: Director

Company Name: Duff & Phelps, LLC

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to \$2,000, or a prison term of two to 10 years and a fine of up to \$5,000.

PC Propage		Source	Hororettean
PC Property Capital Cost	60,584,485	ð	KUMMAN
PC Property Capital Cost (\$KW)	208	U	<b>D</b> %
PC Property Capacity (MM)	292	Š	Shour
PC Property Net Amural Generation Capacity (KWN)	808,493,135	υ	Distrambia
P.C. Property Net Annual Generation Capacity (MINN)	808493	Ú	
Plant Capacity Factor	31.85%	. CW	
Plant Heat Rate (bit/k/Wh)	7.503	Š	
Plant Heat Rate (NP/S) TURMS)	0.03	α	

8.750 1,000 2.20 3,600 1,000,000

del Outputs	%52.01 \$ 0.03079	
Levelizad Cost of Energy (ELCOET) No	Capital Recovery Factor (TCRFT) LCOE (Shakh)	See Livelzed Cost of Energy model in Anaphment A

Cost Analysis Procedure Stor

ATTACHSENT B

Texpayer: Flant Plent Sumanay.

Codonwood Energy Company, LP Codonwood Energy Company, LP 1260 MM 4x4 Configuration Combined Cycle Power Pact (2003) Newton County, Texas Terrill Cox Adalysis Procedure ("CAP") Calcustrons

8. Cost Analysis Procedure ("CAP")

[(PCF x CCN) - CCO - MP]] Formula:

> A. Definitions (provided by TCEQ)<sup>23</sup> 1. Production Capacity Factor ("POF"

The ratio of the capacity of the existing equipment or process to the capacity of the new equipment or

Capital Cost New ("CCN")
 CCN is the estimated total capital cost of the new equipment or process.

Capital Cost Old ("CCCC")

CCO is the cost of comparable equipment or a comparable process without the pollution control,

The standards for cakulating CCO are: <sup>33</sup> If comparable equipment without the polition control regime is on the market in the U.S., then use the average market price

The conditions to variable 3.1 to not apply and the conpany is replacing an existing unit that already has received a positive use of the most recent generation of technology must be used.

determination, the company shall use the CCO from the application for the previous use determination.

22 if the conditions in variable S.f. and 3.2 do not apply and the company is relating an existing unit, then the company shall convert the company shall convert the company shall convert the company of the unit to having 4 applicated industry specific standard. If the production capacity of the new equipment or process is lower than the production capacity of the old equipment or process is lower than the production capacity of the old equipment or process CCC is divided by the PCF to adjust CCC to reflect the same capacity as CCN.

<sup>24</sup> if the conditions in variables 3.1, 3.2 and 3.3 do not apply, and the company can orbitin an estimate to manifacture the alternative equipment without the politicion control feature, then an exerge estimated cost to mentifacture this unit must be used. The comparable unit must be the most recent generation of technology. A copy of the estimate must be provided with the worksheet including the specific source of the information.

Marketable Product ("MP")

Anything produced or recovered using politrion control property that is sold as a product, is accumulated for later use, of is used as retwinstantial in arrantial extraction by the control property sold in arrantial extraction of produced using the politrion control property sold, tractic discussion that is a required for inguistic product of produced using the politrion control property sold, tractic discussion produces (including access (including at a different facility). Marketiskie product does not disclude any emission altowances that it is said from isstalation of the politrion control property.

Marketable Product Value ("MPV")

The marketable product value may be catchistaid in one of the ways:

". The reside value of the product produced by the equipment for one year periods. Typically, the most recent three-year everage price of the market should be used in the capulation. If the price varies from state-to-claim, the applicant shall calculate an everage and explain tow the figures were determined.

sed to the material for internal accounting value is comparable to the value assigne 2. If the material is used as an infermediate material in a production process, then the value assign

purposes may be used. It is the responsibility of the applicy other similar produces of the product.

6. Direct Costs of Production ("DCP")

ation, and personsel, but excluding non-cash The costs directly attributed to the production of the product, including raw, costs, such as overhead and depredation.

The estimated useful life in years of the equipment that is being evaluated for a

8, tFactor Year One.

9, Interest Rade 10%.

Administrative Code, Chapter 17 R Title 30, Texas. Off Pice is 1 Cotton

B. CAP Formulas (provided by TCEQ)

KPCF x CCN) - CCO - NPVMPN Partial Use Determination

Production Capacity of Existing Equipment or Process Production Capacity of New Equipment or Process Production Capacity Factor (PCF") Watere.

And where:

NOVAP

C. CAP Formulas for PC Property

MWh per Year Electricity Price (\$/MWh) Marketable Product Veitue (TMPV")

x KWh per year COE Direct Cost of Production ("DCP")

Fuel Heat Capital Recovery Towed ORM Factor Costs
Year X Factor Factor Factor Hours per Year Capital 100F

Cottonwood Energy Company, LP

1,280 MM 4x4 Configuration Combined Cycle Power Plant (2003) Newton Courty, Texas Tier III Cost Analysis Procedure (\*CAP\*) Calculations December 2, 2011 Cottonwood Energy Company, LP Cottonwood Energy Center Plant Summary; Plant Location: Project: Date: Rev:

III. Cost Analysis Procedure ("CAP") Calculations for Cottonwood Unit 4 HRSG

(POF X CON) - CCO - NPVMP CCN

Formstar

A. Marketable Product Value ("MPV")

S28,567,761 (S) MWh 808,493 S CIVAWN W. Electricity Price \$35.32

B. Production Cost ("PC")

ievelizet Cost of Energy (\*LGOE")

524,893,682 808,493,135 KWh S X KWH

\$6,0308

Not Present Value Marketable Product ("NPVNP") Calculation

VAM (\$) ď. I

NPVMP (S)

\$34,541,145 \$24,893,662 \$28,557,781

\$34,541,145 NPVMP

\* #MP is ≤ 0, then MP = 0.

### ATTACHMENT B

Taxpayer:

Cottonwood Energy Company, LP

Plant:

Cottonwood Energy Center

Plant Summary:

1,260 MW 4x4 Configuration Combined Cycle Power Plant (2003)

Plant Location:

Newton County, Texas

Project:

Tier III Cost Analysis Procedure ("CAP") Calculations

Date:

December 2, 2011

Rev:

## Levelized Cost of Energy ("LCOE") Model[1]

### Formulas

Capital Recovery Factor ("CRF") =  $\frac{1 \times (1 + 1)^n}{(1 + i)^n - 1}$ 

### Calculations

Capital Recovery Factor

10.23%

LCOE (\$/kWh)

\$ 0.03079

Note: The Levelized Cost of Energy is a calculation developed by the United States Department of Energy's National Renewable Energy Lab to determine the cost of generating energy (electricity) using the design or performance criteria for a specific power generation unit. The website above gives a more detailed description of the model and its development.

<sup>11</sup> http://www.nrel.gov/analysis/icoe\_documentation.html

Duff Phelps I Cottonwood Unit 4 Present Value Calculations

20	
Procedure	
Cost Arralysis	

ATTACHMENT B

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Cottonwood Energy Company, LP

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	\$3,664,099	30	17.44940227	<del>()</del>	209,984	
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# Attachment E

Bryan W. Shaw, Ph.D., Chairman Carlos Rubinstein, Commissioner Toby Baker, Commissioner Zak Covar, Executive Director



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April is about month to be the partial technique again a commit its comment

July 10, 2012

Mr. Greg Maxim
Director
Duff and Phelps, LLC
919 Congress Ave Ste 1450
Austin, Texas 78701

Re:

Notice of Negative Use Determination Cottonwood Energy Company, LP Cottonwood Energy Center 976 County Road 4213 Deweyville (Newton County) Regulated Entity Number: RN100226109 Customer Reference Number: CN602765687 Application Number: 15505; Tracking Number: CC-2011-48

### Dear Mr. Maxim:

This letter responds to Cottonwood Energy Company, LP's Application for Use Determination, received July 5, 2011, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Cottonwood Energy Center.

The TCEQ has completed the review for application #15505 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4 and §17.6. Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at ronald.hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Chance Goodin, Team Leader Stationary Source Programs

Air Quality Division

Mr. Greg Maxim Page 2 July 10, 2012

CG/RH

cc: Chief Appraiser, Newton County Appraisal District, 109 Court Street, Newton, Texas 75966

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# Attachment F

Bryan W. Shaw, Ph.D., Chairman Carlos Rubinstein, Commissioner Toby Baker, Commissioner Zak Covar, Executive Director



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 10, 2012

Mr. Greg Maxim
Director
Duff & Phelps, LLC
919 Congress Avenue
Suite 1450
Austin, Texas 78701

Re: Notice of Negative Use Determination

Cottonwood Energy Compnay, LP

Cottonwood Energy Center 976 County Road 4213

Deweyville (Newton County)

Regulated Entity Number: RN100226109 Customer Reference Number: CN602765687

Application Number: 16412 Tracking Number: CC-2012-02

Dear Mr. Maxim:

This letter responds to Cottonwood Energy Compnay, LP's Application for Use Determination, received December 2, 2011, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Cottonwood Energy Center.

The TCEQ has completed the review for application #16412 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4. The justification for the negative use determination is provided below.

Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at Ronald.Hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Greg Maxim Page 2 July 10, 2012

Sincerely.

Change Coodin To

Chance Goodin, Team Leader Stationary Sources Team Air Quality Division

CG/RH

Enclosure

cc: Chief Appraiser, Newton County Appraisal District, 109 Court St, Newton, Texas 75966

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# Attachment G

Bryan W. Shaw, Ph.D., Chairman Carlos Rubinstein, Commissioner Toby Baker, Commissioner Zak Covar, Executive Director



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## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 10, 2012

Mr. Greg Maxim
Director
Duff & Phelps, LLC
919 Congress Avenue
Suite 1450
Austin, Texas 78701

Re: Notice of Negative Use Determination

Cottonwood Energy Compnay, LP Cottonwood Energy Center 976 County Road 4213

Deweyville (Newton County)

Regulated Entity Number: RN100226109 Customer Reference Number: CN602765687

Application Number: 16411 Tracking Number: CC-2012-03

Dear Mr. Maxim:

This letter responds to Cottonwood Energy Compnay, LP's Application for Use Determination, received December 2, 2011, pursuant to the Texas Commission on Environmental Quality's (TCEO) Tax Relief for Pollution Control Property Program for the Cottonwood Energy Center.

The TCEQ has completed the review for application #16411 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4. The justification for the negative use determination is provided below.

Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at Ronald.Hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Greg Maxim Page 2 July 10, 2012

Sincerely,

egood.

Chance Goodin, Team Leader Stationary Sources Team

Air Quality Division

CG/RH

Enclosure

cc: Chief Appraiser, Newton County Appraisal District, 109 Court St, Newton, Texas 75966

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# Attachment H

Bryan W. Shaw, Ph.D., Chairman Carlos Rubinstein, Commissioner Toby Baker, Commissioner Zak Covar, Executive Director



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution Sadday Biresinan

July 10, 2012

the Oralley Orderer to

Mr. Greg Maxim Director Duff & Phelps, LLOW IN TUNE YOR THERE CHARLES WHEN THE THE PROPERTY OF THE PRO 919 Congress Avenue Suite 1450 Austin, Texas 78701

Notice of Negative Use Determination Re:

Cottonwood Energy Compnay, LP

Cottonwood Energy Center 976 County Road 4213

Deweyville (Newton County)

Regulated Entity Number: RN100226109 Customer Reference Number: CN602765687

Application Number: 16410

Tracking Number: CC-2012-04

Dear Mr. Maxim:

This letter responds to Cottonwood Energy Compnay, LP's Application for Use Determination, received December 2, 2011, pursuant to the Texas Commission on Environmental Quality's (TCEO) Tax Relief for Pollution Control Property Program for the Cottonwood Energy Center.

The TCEO has completed the review for application #16410 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) 817.4. The justification for the negative use determination is provided below.

Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at Ronald. Hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Greg Maxim Page 2 July 10, 2012

Sincerely,

Chance Goodin, Team Leader Stationary Sources Team

Air Quality Division

CG/RH

Enclosure

cc: Chief Appraiser, Newton County Appraisal District, 109 Court St, Newton, Texas 75966

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# Attachment I

				Pre	Renower	Pre-Renowering Efficiency and Air Emissions Unit 1	cione I lait 1	=		
FACILITY_NAME	DITINU	OP YEAR	HEAT INPUT	NOX RATE Ibs/MMBTU		NOX MASS TONS	(H7WW)	CO3 Tone	Contraction of the second	Contract VOIA
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Barney M. Davis	, ,	1 2004	1,365,091		0.1	115.4		81 133 3		
Barney M. Davis	• 1	1 2005	4,018,371		0.13	343,1		738 809 6	2 7 7 2	
Barney M. Davis		1 2006		10	0.12	319.8		0.000,000 0.000,000		
Barney M. Davis		1 2007			0.15	198.3		207,027,00		
Barney M. Davis	,,,	1 2008	3 4,749,542		0.13	420.8		0.720 CSC		
Barney M. Davis		1 2009		2	0.15	332.1		190 145 3		0.0010
Barney M. Davis		1 2010	660,763		0.1	48.3	53.988	39 755 9		
Barney M. Davis		1 2011	1,906,567	12	0.1	131	162,795	113.303.8	-	
Barney M. Davis	`	1 2012	1,674,769	-	0.012	138.1	138,581	99,528.2		-
				Pre-	Repoweri	Pre-Repowering Efficiency and Air Emissions Unit 2				
FACILITY_NAME	OILIND	OP_YEAR	HEAT_INPUT	NOX_RATE Ibs/MM		NOX_MASS TONs	MW-H)	CO2 Tons	Operating Hours	NOX TONS/MW/-HB
Barney M. Davis	. 4	2 2003	2,094,717		0.1	152.7	189,000	131,053.6		
Barney M. Davis	. 4	2 2004	11,922,584	ch	0.12	837.6	1,070,886	708,543.8		-
Barney M. Davis	- 7	2 2005	6,256,894		0.11	388.7	516,358	371,836.8		-
Barney M. Davis	. 1	2 2006	2,965,995	78	0.15	280.5	233,671	176,265.6		
Barney M. Davis	, 1	2 2007	1,339,322	12	0.09	82.8		79,592.2		
Barney M. Davis	. 4	2 2008	3,419,274	t	0.15	294.4	312,553	203,201.2		-
				Post-Repowering Ef	; Efficienc	ficiency and Air Emissions BMD Units 3, 4 & NB Units 8, 9	Jnits 3, 4 & NB Units 8, 9			
FACILITY NAME	UNITID	OP_YEAR	HEAT_INPUT	NOX_RATE Ibs/MMBTU		NOX_MASS_TONs	Gross Load (MW-H)	CO2 Tons	Operating Hours	NOX TONS/MW-HR
Barney M. Davis	*"		8,264,568	~	0.03	73.3	1,064,646	491,149.8		0.0001
Barney M. Davis		3 2012	5,289,883	~	0.02	40.1	862,398	314,371.3		-
Barney M. Davis	7	4 2011	8,092,698	~	0.03	6'89	1,081,929	480,942.4		
Barney M. Davis	7	4 2012	4,943,162	-	0.02	36.3	663,495	293,764.0		
Nueces Bay	3				0.02	52.7	1,093,549	474,830.6		
Nueces Bay	~				0.02	30	687,430	297,856.4		
Nueces Bay	J1		7,978,245		0.02	45.5	1,092,722	474,132.6	5558	-
Nueces Bay	2	9 2012	5,117,020		0.02	29.5	698,703	304,095.0		

